Government Street
Traffic and Safety Analyses
East Blvd. to Lobdell Ave.
S.P. No. H.011295

Stantec

Prepared for:
Louisiana Department of
Transportation and Development

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Executive Summary

The purpose of this project is to address the safety issues on Government Street from East Boulevard to Jefferson Highway (LA 73) and then continuing east to Lobdell Avenue. The safety performance shows nearly the entire corridor experiences abnormal crash rates and several crash types occur in proportions that exceed statewide averages for similar roadway classification. The safety issues are attributable to the existing lane configuration and the lack of turning lanes. To achieve this goal, since widening Government Street is not practical, a feasible option is to implement a road diet and reclaim part of the existing travel lanes to convert to a two-way-left-turn lane and either bicycle lanes, on-street parking, or improved transit stops. Except at locations where it is required to maintain acceptable level of service, the new cross-section will provide one through lane in each direction, a two-way-left-turn lane and the reclaimed space used for a bicycle lane in each direction. This new configuration will increase the separation between pedestrians and motor vehicles thus enhancing pedestrian and motorist safety. Implementing a road diet and enhancing modal choice in the corridor is consistent with the Complete Streets Policy of Louisiana Department of Transportation and Development (LADOTD) and has also been implemented successfully by many agencies to enhance safety of a corridor for all users. A complete streets policy according to FuturEBR is envisioned to "promote a more comprehensive and integrated transportation network that provides safe and diverse multimodal transportation option to all Louisianans regardless of geographic location, physical condition, economic status or service requirement." This policy was unanimously approved by the City-Parish Council in November 2014. The project is being funded through the LADOTD Highway Safety Program. While important, accommodating bicyclists and pedestrians—and any corridor revitalization resulting from the project—are secondary benefits.

To achieve the goals of enhancing safety by implementing a road diet, two traffic characteristics were evaluated to measure the impacts of the improvements: safety and operations. The approach adopted for the Government Street safety analysis is outlined in LADOTD's *Guidelines for Conducting a Safety Analysis for Transportation Management Plans and Other Work Zone Activities*. The expected safety performance of the corridor based on the proposed alternatives of the road diet (bike lanes, on-street parking and better transit stops) were evaluated using the Highway Safety Manual (HSM) methodology to estimate expected crashes. Crash data from January 2008 to December 2010 was obtained from LADOTD for the safety analysis.

On average there are over 270 crashes per year on the studied segment of Government Street. The predominant crash types that have occurred on Government Street are rear end, left turn, right angle and side swipe related crashes. The geometric features of Government Street contribute to the overrepresentation of these crash types. The lack of medians and turning lanes contribute to the overrepresentation of side swipe and rear end crashes. These types of crashes can be reduced with the provision of left turn pockets so that turning vehicles have refuge from through vehicles. The proposed road diet offers improved safety for this corridor either by eliminating or reducing conflict points.

The reduction in roadway from four to three lanes will make it easier and safer for pedestrians to cross the street. This reduction in lanes will also permit the excess pavement to be used for other multimodal improvements. For example, the addition of bicycle lanes in each direction would encourage multimodal use in this corridor. Moreover the additional buffer created by bike lanes will encourage more pedestrian use.

The Highway Safety Manual predictive worksheet was used to assess the relative safety between the existing and proposed road diet. The total length of corridor analyzed is 4.2 miles. The results are summarized below and it shows a potential reduction in crashes of 39.7% - 52.4%. A reduction in crashes—especially during peak periods—will also reduce congestion and delays along the corridor.

Table 1: Crash estimation based on Highway Safety Manual

Year	HSM Crash Estimation						
	No Build	ALT 1	ALT 2	ALT 3	ALT 4	ALT 5	% Reduction
2014	61.2	29.1	29.3	29.3	36.9	36.9	39.7% - 52.4%
2015	62.8	27.3	30.1	30.1	37.8	37.9	39.6% - 56.5%
2016	64.3	30.6	30.8	30.8	38.8	38.8	39.7% - 52.4%

The road diet will have little to no impact to existing access points. In fact, access should be enhanced due to the center turn lane. Access will also be enhanced with new left turn lanes on Government Street at the Park Boulevard and S. Acadian Thruway intersections. The addition of left turn movements at these intersections will improve access to these major streets, resulting in a modest redistribution of traffic among the major thoroughfares.

Six approaches along Government street experience increases in vehicle delay of 25% and six approaches experience reductions in vehicle delay of 25%. These results show that traffic operations along Government Street will get slightly better in some areas and slightly worse in others. This road diet performs at LOS D or better at each intersection, satisfying standard roadway design criteria. The regional planning model predicts that 100 vehicles will relocate to North Boulevard during the PM Peak Hour. Based on the operational analysis, the proposed road diet maintains sufficient capacity along Government Street such that no additional diversion of traffic is necessary anticipated.

It should be noted that the three lane cross-section can be maintained throughout the entire corridor except for two locations. The first is at the intersection of Government Street and S. Foster Drive. Due to the existing traffic volumes, this intersection will need to maintain two eastbound and westbound through lanes to operate with the preferred signal phasing. The second is at the intersection of Government Street at S.10th Street. This intersection requires all four through lanes on Government Street as they exist today. The roadway transitions to the three lane cross-section just west of Eddie Robinson Sr. Drive.

Other benefits expected to accrue by implementing this project is the transformation of Government Street into a truly multimodal corridor. This in turn will encourage more pedestrian activity, biking and use of public transit because the corridor would be safer and more attractive. These outcomes are consistent with Complete Streets Policy of LADOTD and the City-Parish. The significant benefits of implementing a road diet and transforming Government Street into a Complete Street is consistent with various goals related to social equity, economic revitalization, environmental stewardship and safety improvements. The report makes a compelling argument for the proposed corridor enhancements to be considered for implementation.

1.0 INTRODUCTION

The purpose of this project is to address the safety issues on Government Street from Jefferson Highway to East Boulevard (LA 73) and from Lobdell Avenue to Jefferson Highway as shown in **Figure 1**. The safety issues are attributable to the existing lane configuration and the lack of turning lanes. To achieve this goal, since widening Government Street is not practicable, a feasible option is to implement a road diet. A road diet typically entails reducing the width or number of lanes to provide for bike lanes, sidewalks and other streetscape features. The reclaimed part of the existing travel lane on Government Street will be developed into bicycle lanes and the rest of the space reassigned. Except at locations where it is required to maintain acceptable level of service, one through lane will be provided in each direction separated by a two-way-left-turn (TWLT) lane and the reclaimed space used to provide bicycle lanes in each direction. This new configuration will increase the separation between pedestrians and motor vehicles and provide refuge for turning vehicles, and enhance pedestrian and motorist safety.

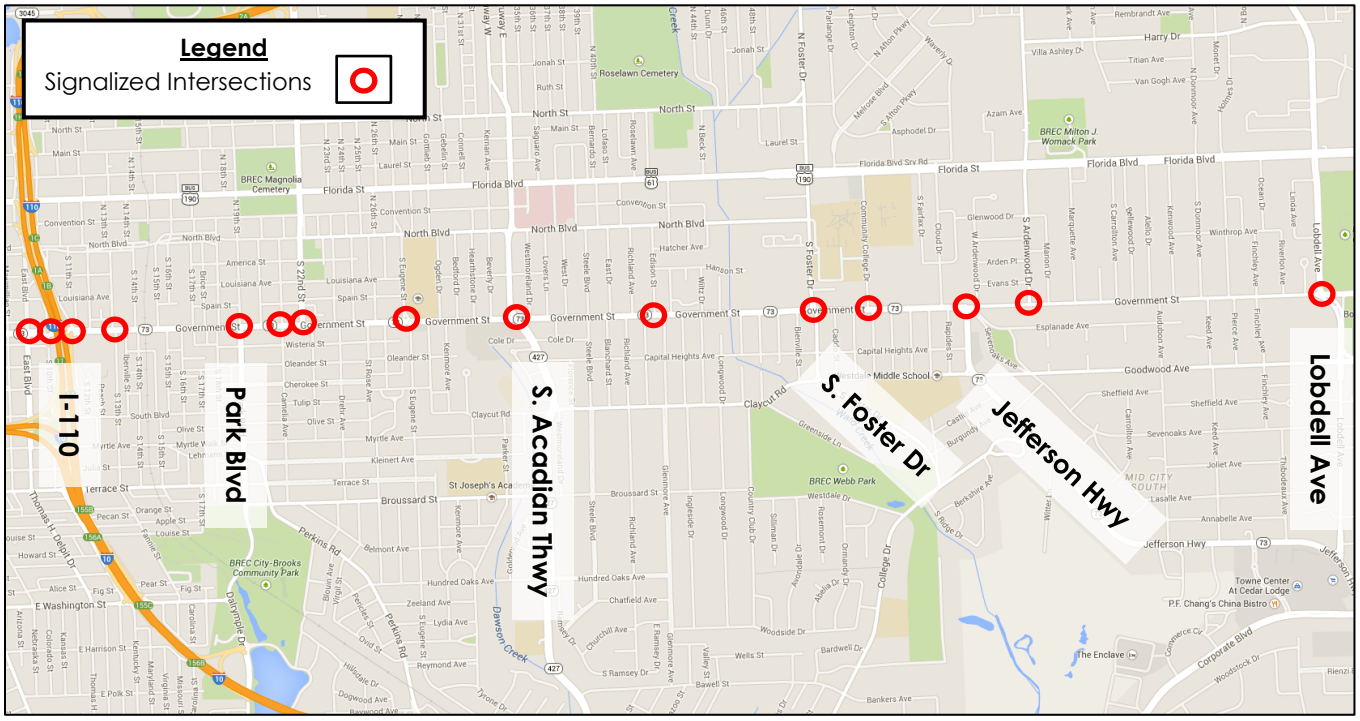
Implementing a road diet and enhancing modal choice in the corridor is consistent with the Complete Streets Policy of Louisiana Department of Transportation and Development (LADOTD) and has also been implemented successfully by many transportation agencies to enhance corridor safety for all users. A complete streets policy according to FuturEBR is envisioned to "promote a more comprehensive and integrated transportation network that provides safe and diverse multimodal transportation option to all Louisianans regardless of geographic location, physical condition, economic status or service requirement." This policy was unanimously approved by the City-Parish Council in November 2014. The City-Parish policy is consistent with Complete Streets Policy of LADOTD which states:

> "This policy will create a comprehensive, integrated, connected transportation network for Louisiana that balances access, mobility, health and safety needs of motorists, transit users, bicyclists, and pedestrians of all ages and abilities, which includes users of wheelchairs and mobility aids. It ensures a fully integrated transportation system, by planning, funding, designing, constructing, managing, and maintaining a complete and multi-modal network that achieves and sustains mobility, while encouraging and safely accommodating pedestrians, bicyclists, and transit users."

Therefore the Complete Street road diet will be evaluated for impacts on two key factors: safety and operations.

The limited right of way along the Government Street corridor means that the only way to provide for the other components advocated in the Complete Streets policy is to implement a road diet.

Figure 1: Study Area



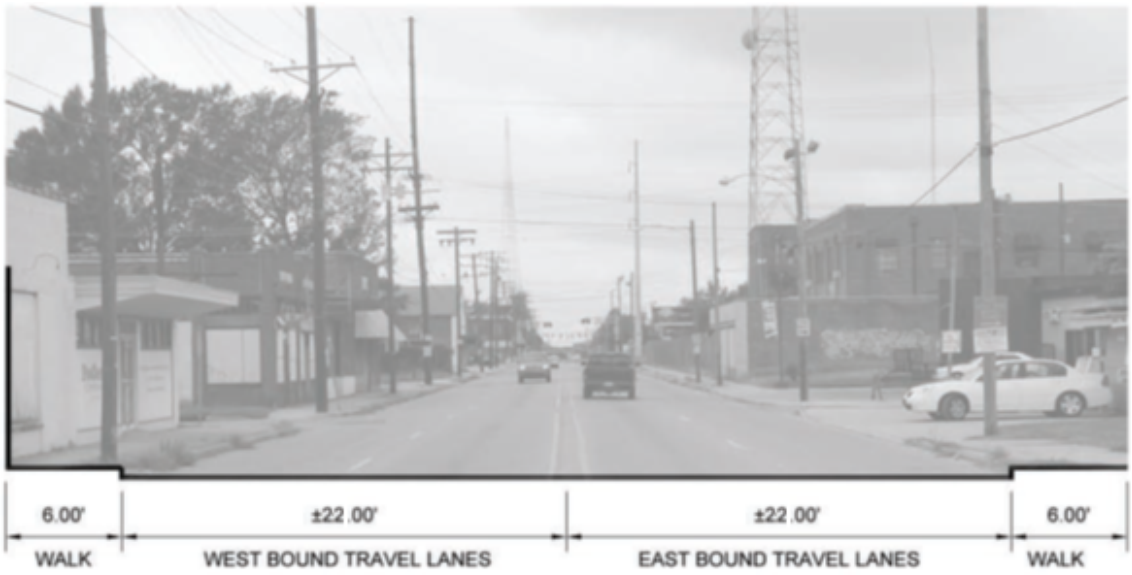
1.1 BACKGROUND

Government Street is an urban, four-lane undivided arterial that runs in an east-west direction. It connects downtown Baton Rouge to Mid-City and Independence Park. The average daily traffic (ADT) on this roadway ranges between 14,000 – 25,500 vehicles and the posted speed limit is 40mph. The adjoining developments include residential homes, schools, shops and light commercial facilities. Several schools are located along the Government Street corridor -- Catholic High School, Baton Rouge High School, Dufrocq Elementary School, Our Lady of Mercy Catholic School, and Bernard Terrace Elementary.

The FuturEBR report specifically identified Government Street, among other corridors, as a location to implement a Complete Street. The limited right of way available on this corridor implies that a Complete Streets concept can only be implemented with road diet. **Figure 2 and Figure 3** show segments of Government Street with the existing dimensions of the cross-section elements. **Figure 4** shows the existing geometry at each intersection along the corridor.

Figure 2: Government Street typical cross-section

Figure 3: A cross-section of Government Street near S. 17th Street



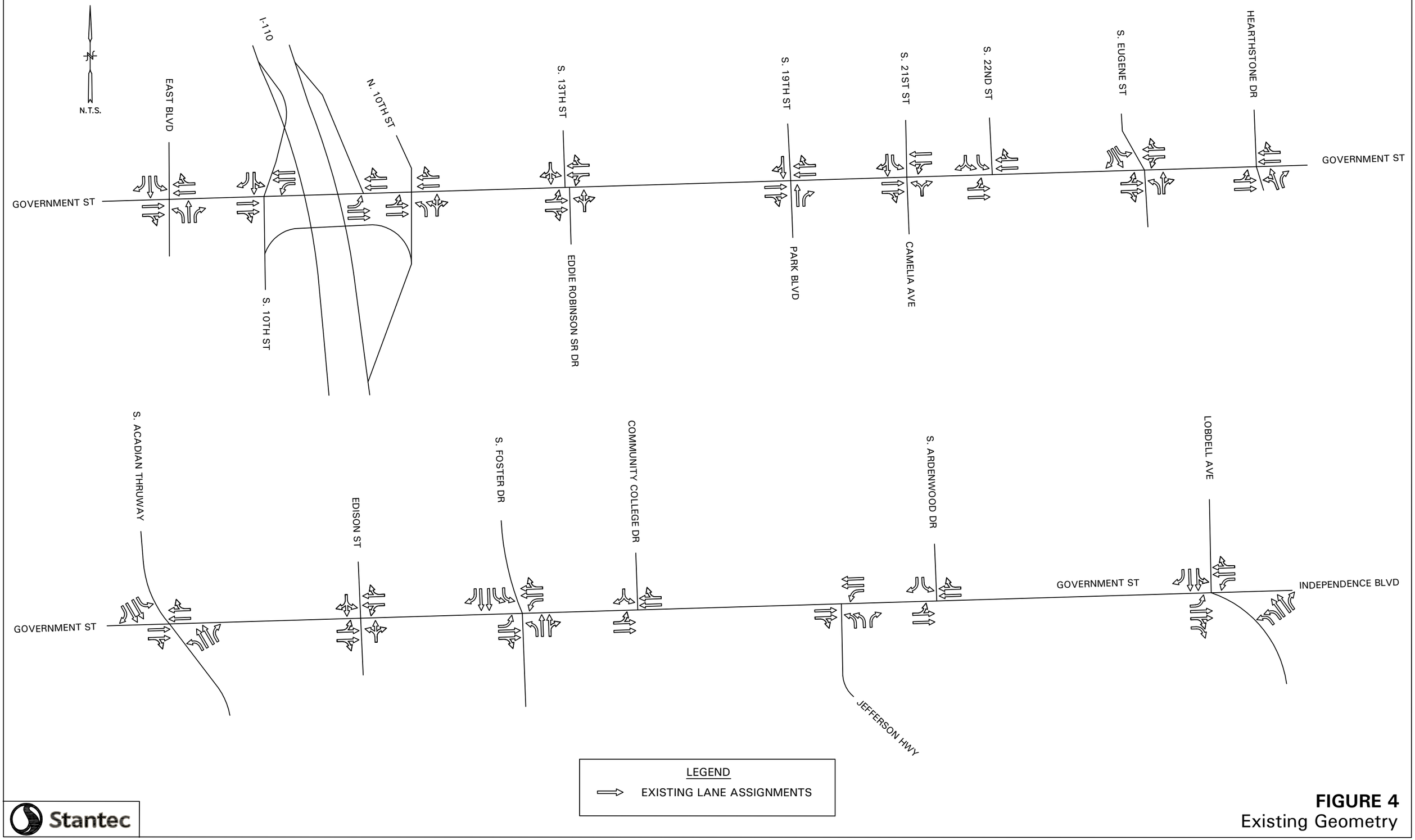


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FIGURE 4
Existing Geometry

2.0 PROPOSED CONDITIONS

A three lane section, which consists of two through lanes separated by a two-way, left-turn lane (TWLTL), has been proposed for this corridor. Left turn lanes will be developed at each signalized intersection to facilitate left turns. Provision of a TWLTL will provide refuge for left turning vehicles from through traffic moving in the same direction. This will help reduce rear end collisions caused by drivers who are either following too closely or distracted. Furthermore with the through lanes unobstructed, there will be no need for drivers, who will otherwise be stopped behind turning vehicles, to make lane changes that can lead to side swipe (same direction) crashes. The reduced exposure of turning vehicles to same-direction, through-lane traffic is expected to reduce the collision types. In addition to the above, crashes involving left turning vehicles and through movements from the opposite direction will be reduced. Multiple lanes in the opposing direction can create occlusions and subsequent left turn crashes. The proposed three-lane cross section will eliminate this condition.

As previously discussed, reducing the travel lanes from 4 to 3 lanes creates an opportunity to repurpose the vacated travel lanes into another use, which are as follows:

- Bike lane
- Parking lane
- Transit stop, and
- Expanded sidewalk.

A schematic of the road diet alternatives considered for implementation on Government Street are shown in **Figure 5 through Figure 9.** The final configuration of cross-sections will be determined in alternatives analysis, which is a future phase of the project. It is possible that differing cross-sections can be utilized along the corridor based on traffic volumes and adjacent land-use.

It should be noted that the three lane cross-section can be maintained throughout the entire corridor except at the intersection of Government Street and S. Foster Drive. Due to the existing traffic volumes, this intersection will need to maintain two eastbound and westbound through lanes to operate with the preferred signal phasing. The proposed geometry for each intersection is shown in **Figure 10**. Blue arrows indicate turning movements which currently operate in the through travel lane but will be provided with a separate turn lane under the proposed configuration. Green arrows indicate separate turn lanes which will be provided in locations which do not currently allow turning movements.

Figure 5: Typical Section of I-110 to Steele Boulevard

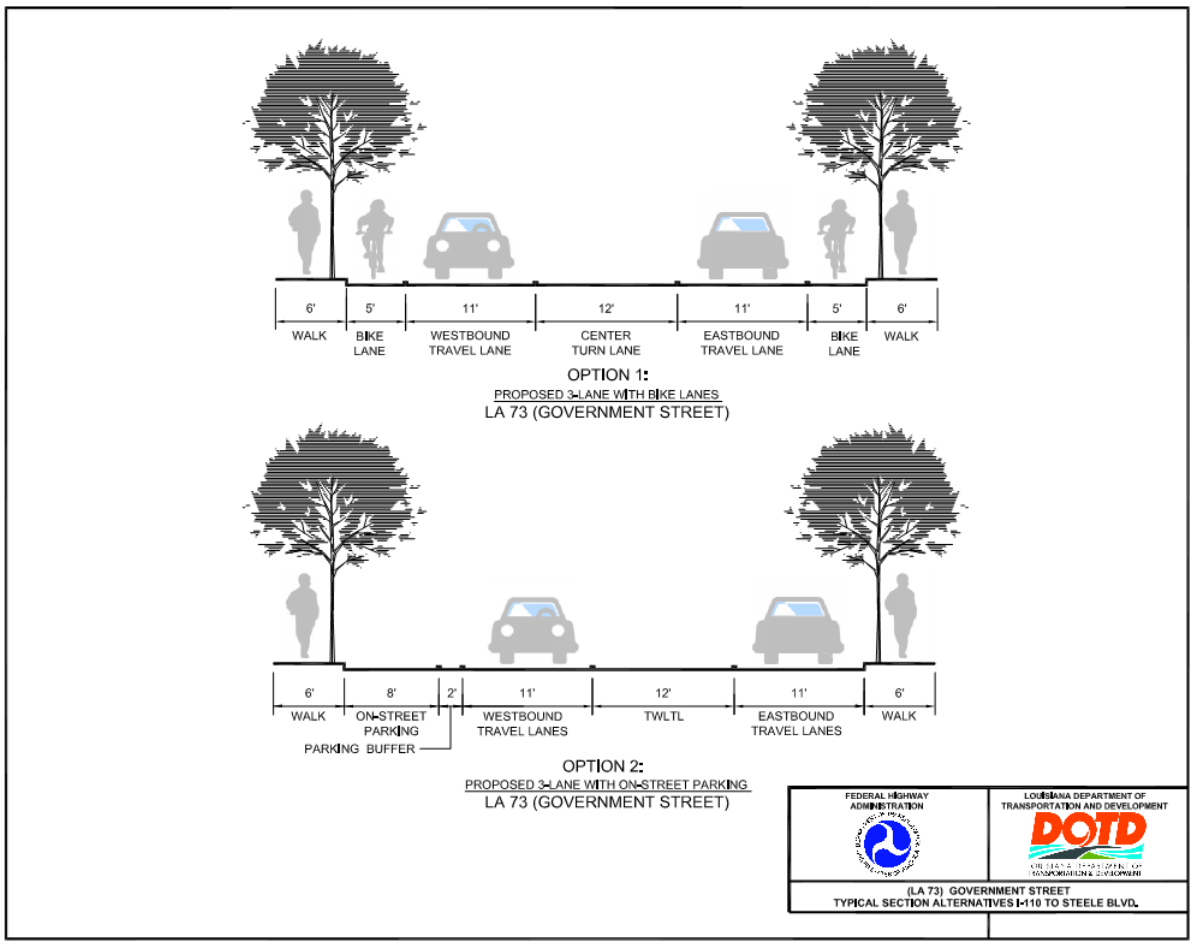


Figure 6: Typical Section Steele Blvd to Moore Street

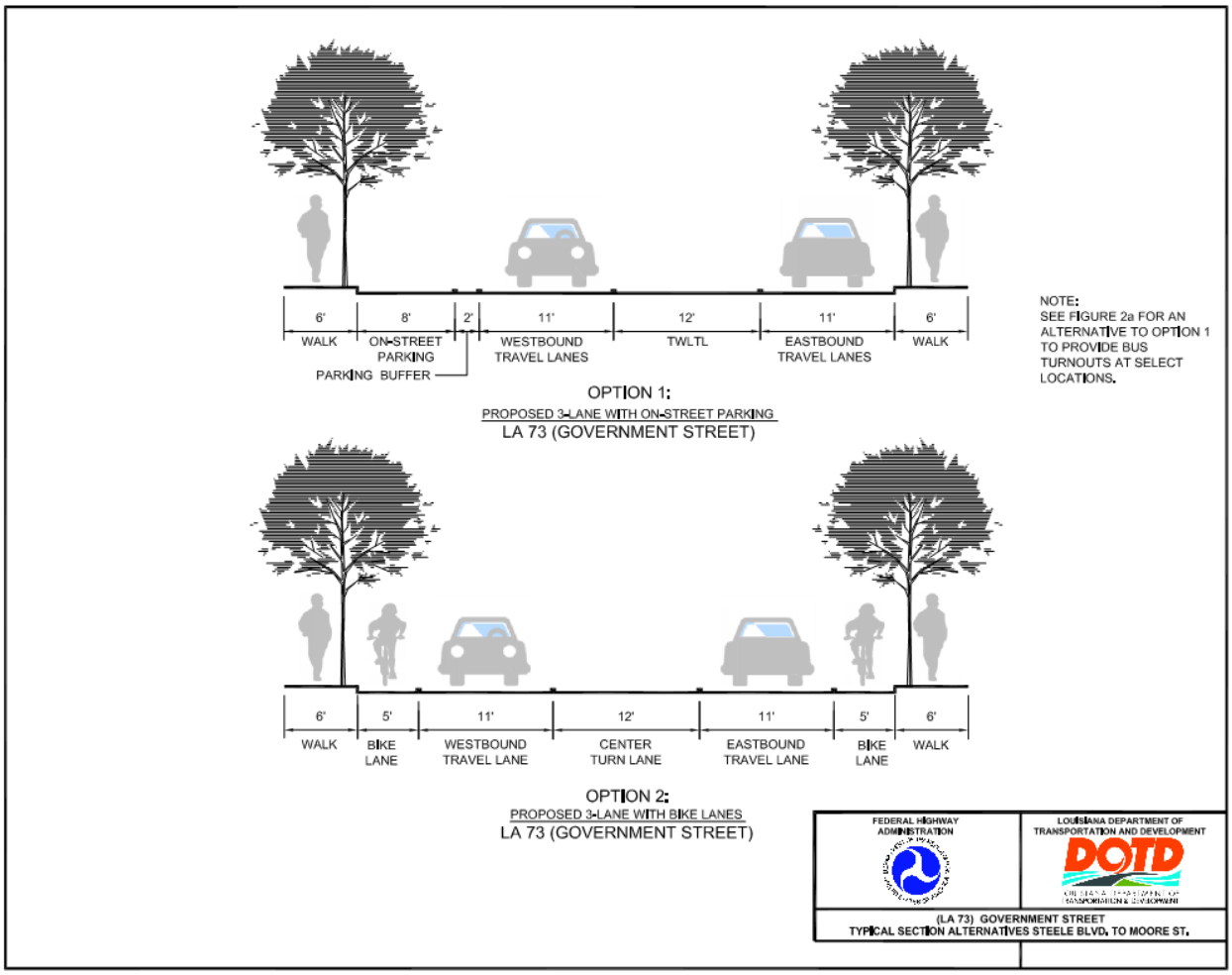


Figure 7: Typical Section Steele Blvd to Moore Street (Raised Median)

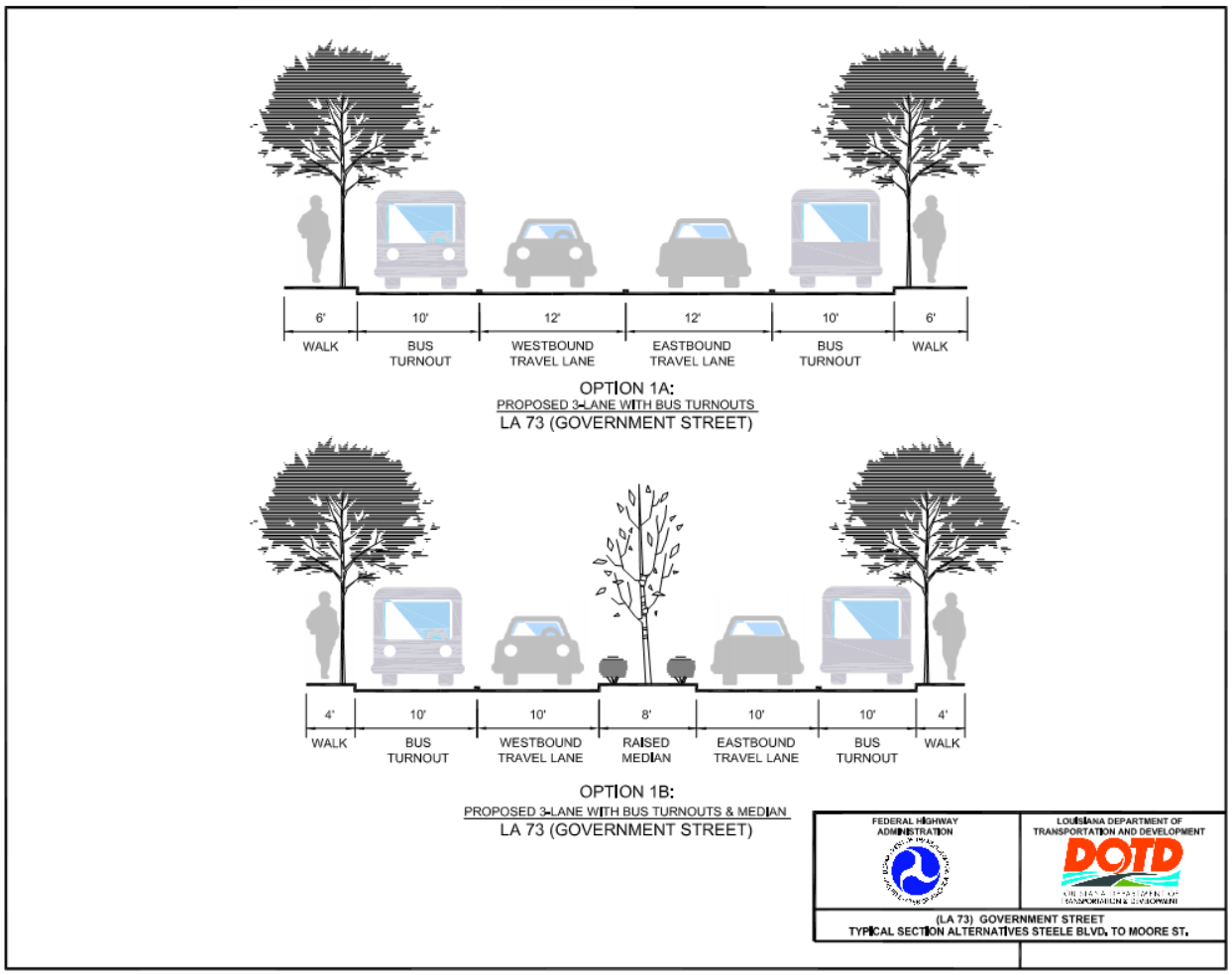


Figure 8: Typical Section Moore Street to Jefferson Hwy

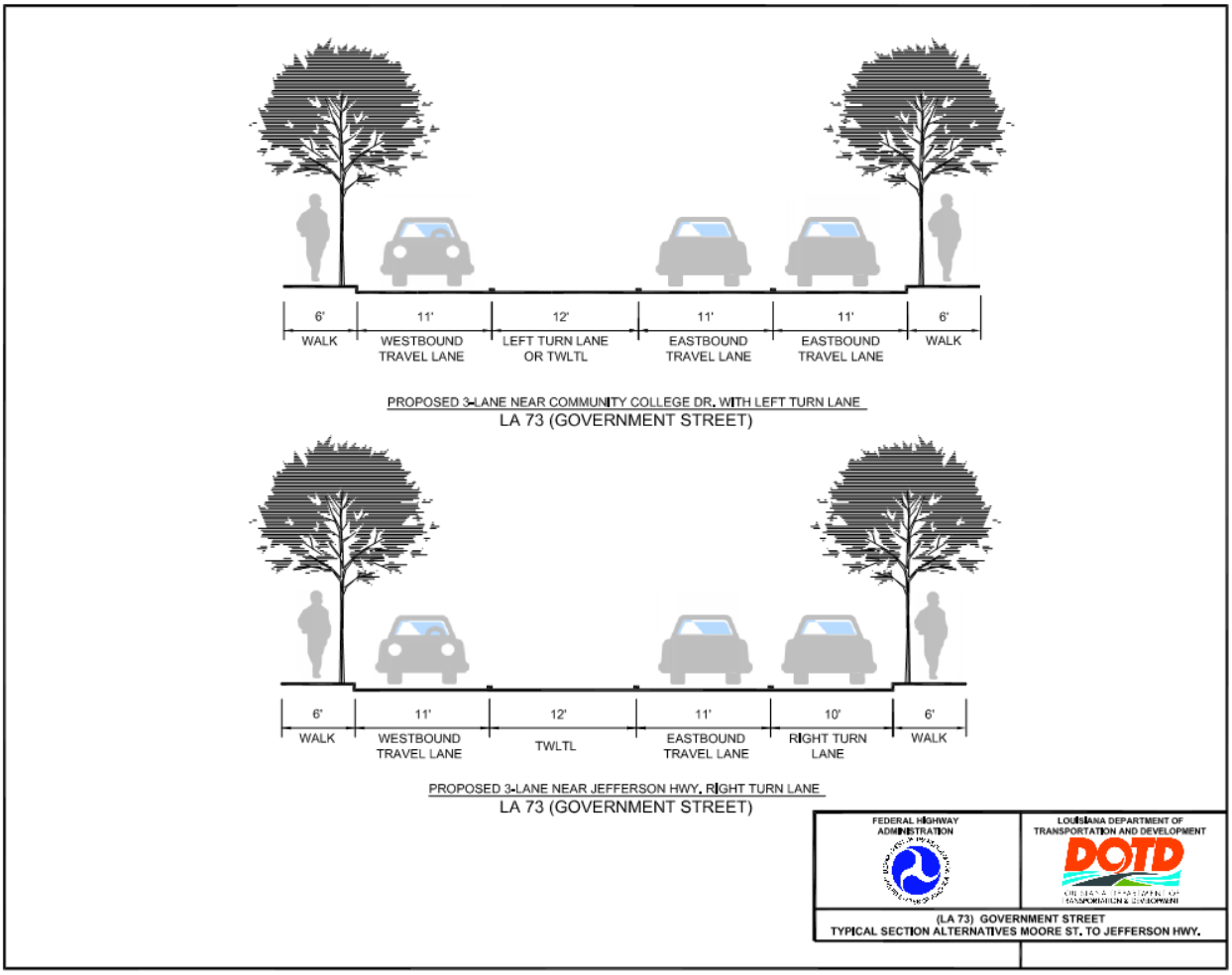
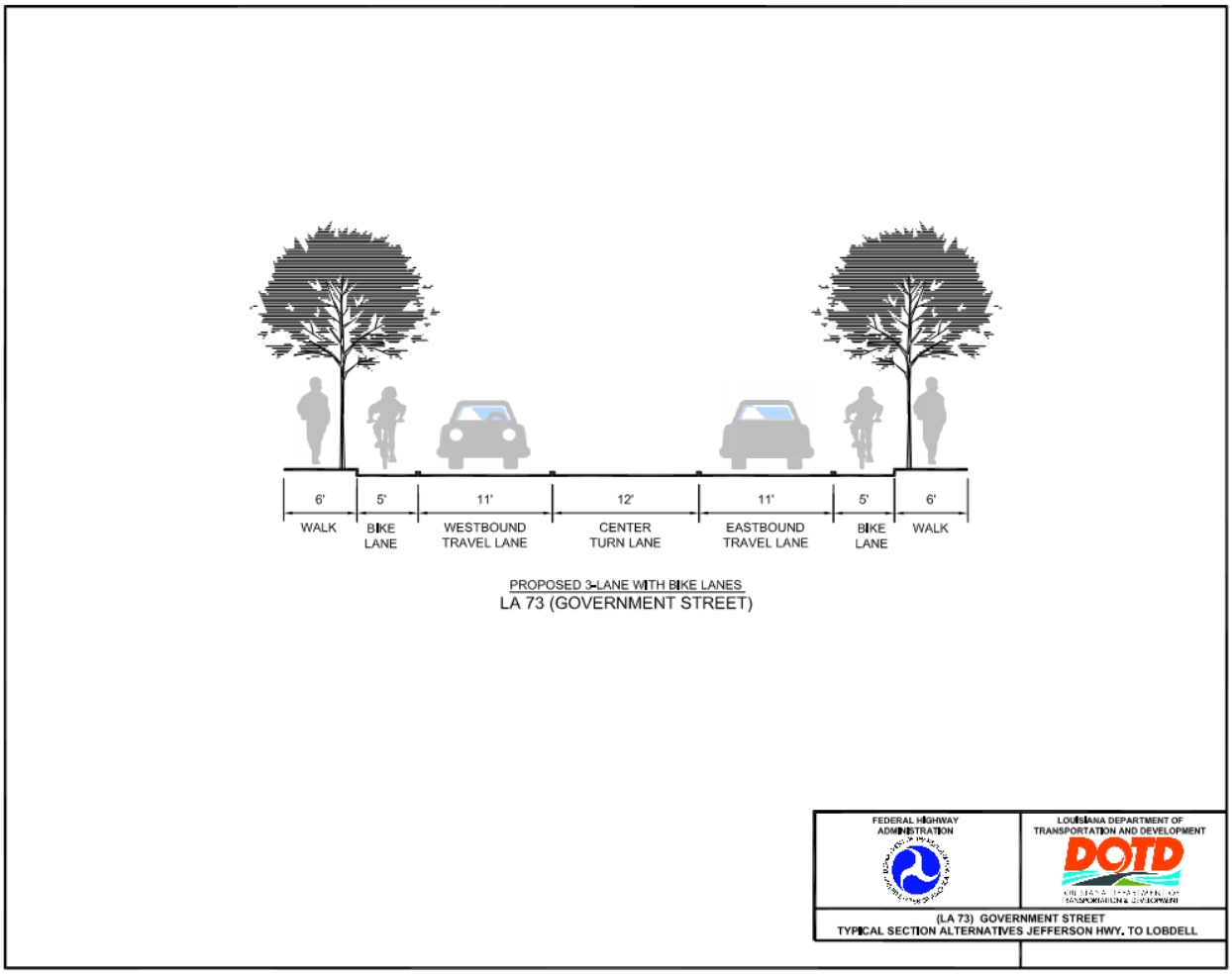


Figure 9: Typical Section Jefferson Hwy to Lobdell Ave



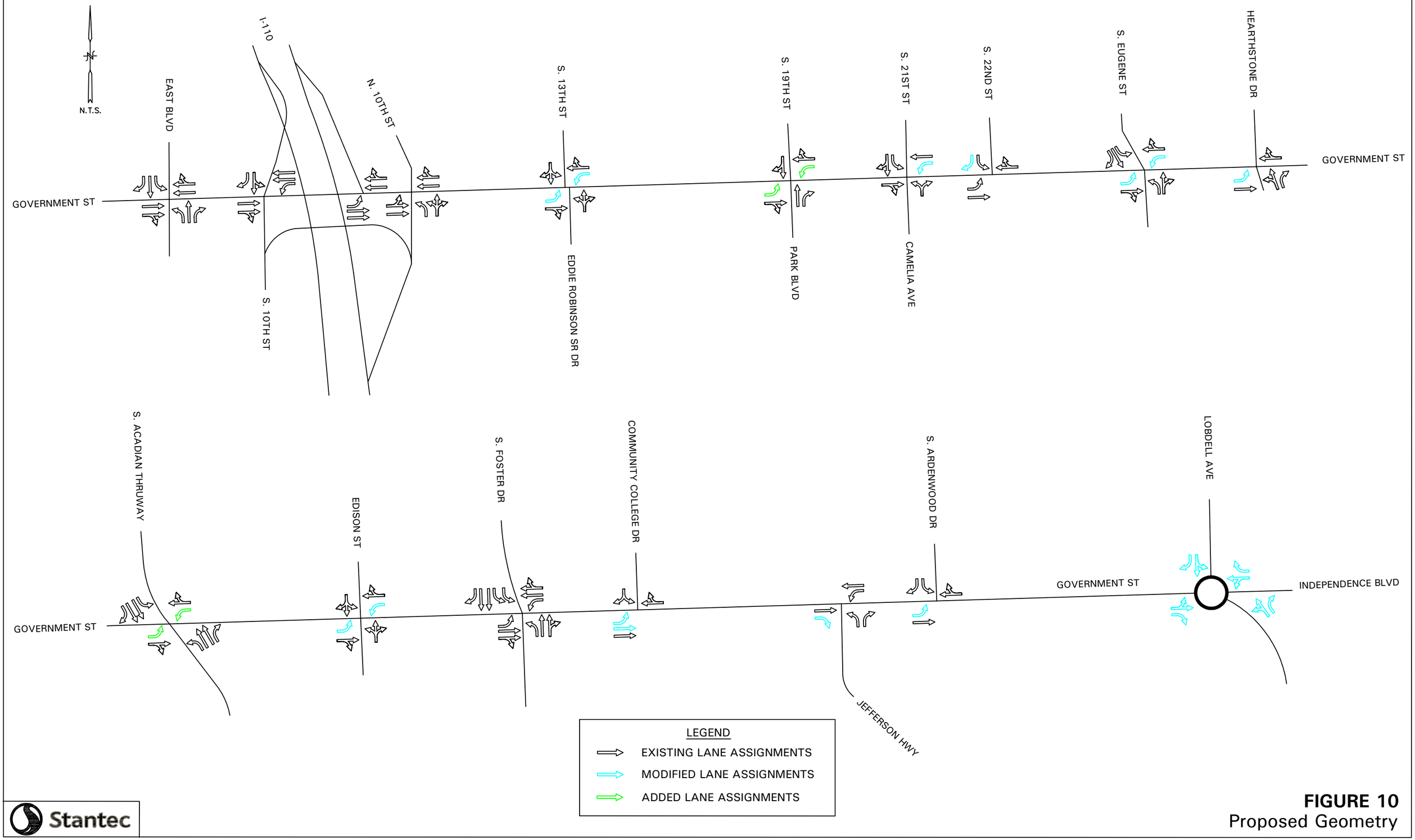


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FIGURE 10
Proposed Geometry

2.1 IMPACT ON PEDESTRIANS

Pedestrian safety is a critical component of an integrated transportation system. The National Highway Traffic Safety Administration reported that in 2010, 4,280 pedestrians were killed and an estimated 70,000 were injured in traffic crashes in the United States. This means an average of one pedestrian is killed every two hours and injured every eight minutes in traffic related crashes. Pedestrian deaths accounted for 13% of all traffic fatalities and 3% of all the people injured in traffic crashes. Fatalities in urban settings accounted for 73% of all pedestrian fatalities, and 79% of pedestrian fatalities occurred at non-intersections.

Louisiana recorded 710 total traffic fatalities in 2010 and 74 were pedestrian fatalities. The pedestrian fatality rate in Louisiana per 100,000 population is 1.63 compared to a national average of 1.38 fatalities. These statistics highlight pedestrian safety in the year 2010, and also underscore the importance of addressing pedestrian related safety.

Except at locations where it is required to maintain acceptable level of service, the new cross-section will provide one through lane in each direction, a two-way-left-turn lane and the reclaimed space used for a bicycle lane in each direction. This new configuration will increase the separation between pedestrians and motor vehicles thus enhancing pedestrian and motorist safety. The reduction in roadway width from four lanes to three lanes will also make it easier for pedestrians to cross since the travel lanes are fewer. This implies that the time assigned to pedestrian movement can be reduced and more time can be assigned for vehicular movement at the signalized intersections. The reduced number of traffic lanes will result in safer crossings for pedestrians since exposure to live traffic will be reduced. Also the new configuration will reduce the "multiple threat" crash types where a driver stops in one lane of a multilane roadway to allow pedestrians to cross, and an oncoming vehicle traveling in the same direction strikes the pedestrians.

2.2 IMPACT ON BIKES

The space gained from the lane reduction in this road diet can be used to create new bike lanes in each direction and encourage a truly multimodal facility catering to transit, autos, bikes and pedestrians in the corridor. The reduced number of lanes will lead to calming of traffic, thus making the road safer for non-motorized users like pedestrians and bicyclists. Bicyclists feel secure knowing they have a dedicated lane within the right of way and it encourages more people to ride.

Over the past several years, the City has made tremendous strides in providing bicycle infrastructure. Just two blocks to the south of Government Street, Capital Heights Avenue has been converted from a two-way street to a one-way street with bicycle lanes. There is an opportunity to connect that bicycle facility to the proposed bicycle lanes on Government Street. Additionally, the Downtown Development District (DDD) is currently designing a multi-purpose trail, commonly referred to as the Baton Rouge Greenway that will connect Brooks Park to downtown. There is an opportunity to connect the proposed bike lanes on Government Street to the proposed Baton Rouge Greenway.

A similar project carried out in San Francisco, California, reported 144% increase in bike usage from 85 to 215 riders during the peak PM hour. Other cities have reported improvements in bike usage as well with increments of 20-40% after bike lanes were provided on some corridors.

2.3 IMPACT ON TRANSIT

The Capital Area Transit System (CATS) currently has a bus route located on Government Street. Based on information provided by the management of CATS, there are two buses that service Government Street with a one-hour headway in each direction. Therefore, the impact to operations on Government Street would be one bus per hour per direction during the AM, noon, and PM peak hours. The current City-Parish ordinances prohibit any vehicle from stopping on the bike lane. Therefore, either a bus stop would need to be created outside of both the travel and bike lanes or the ordinances would need to be modified for Government Street.

2.4 IMPACT ON RIGHT-OF-WAY

No negative impacts of the road diet on right-of-way are anticipated since it involves only restriping the lanes. A roundabout has been proposed at the intersection of Lobdell Avenue and Government Street. To accommodate the geometry of the roundabout, the use of City-Parish owned property in the north-easterly quadrant of the intersection at the decommissioned fire station may be needed.

2.5 IMPACT ON ACCESS

Since the TWLTL does not consist of any positive separation between travel lanes, there will be no adverse impact to access adjoining properties. In fact, access should be enhanced due to the center turn lane. The center turn lane will provide a dedicated left turn lane at each existing intersection to provide separation for vehicles which currently have to turn left out of the inside travel lane. Additionally, access will be enhanced with new left turn lanes on Government Street at the Park Boulevard and S. Acadian Thruway intersections—two locations which do not currently allow left turns. The addition of left turn movements at these intersections will improve access to these major streets, resulting in a modest redistribution of traffic among the major thoroughfares.

3.0 SAFETY ANALYSIS

The approach adopted for the Government Street safety analysis is outlined in Guidelines for Conducting a Safety Analysis for Transportation Management Plans and Other Work Zone Activities, which is a document developed by LADOTD. The goal is to identify patterns or trends in historical crash data that show any locations with overrepresented crashes or abnormal crash occurrence also known as "hot spots" and recommend a mitigation strategy. Overrepresented crashes are crash types that occur more often than statewide averages for the given crash at a given location. LADOTD defines "abnormal crashes" as follows:

> "…a location having at least five crashes and twice the statewide average crash rate for its functional classification for intersections and spot locations and at least five crashes per mile and twice the statewide average crash rate for its functional classification for sections."

The number of crashes, types of crashes (rear end, side swipe, head on, etc.), severity of crashes (fatal, injury or property damage only) and crash rates are analyzed and compared to the statewide averages. The comparison will help to identify overrepresented crashes or hot spots. The subsequent subsections will discuss the crash history of Government Street using crash data from January 2008 to December 2010, which was obtained from LADOTD.

3.1 I-110 INTERCHANGE TO JEFFERSON HIGHWAY

Figure 11 shows a map of the project scope analyzed (See **Appendix A** for safety analysis of the segments and intersections from Jefferson Highway to Lobdell Avenue provided by LADOTD). All crashes that have occurred from January 2008 through December 2010 have been overlaid on this map. The crashes are fairly evenly distributed spatially on the segments. **Table 2** gives a summary of the number and type of crashes that have occurred on Government Street. No fatal crashes have occurred from the interchange to Jefferson Highway from 2008-2010. Also injury and property damage only (PDO) crashes have declined by 39.8% and 22.3% respectively during this period.

Figure 11: Spatial Distribution of Crashes (I-110 Interchange to Jefferson Hwy)

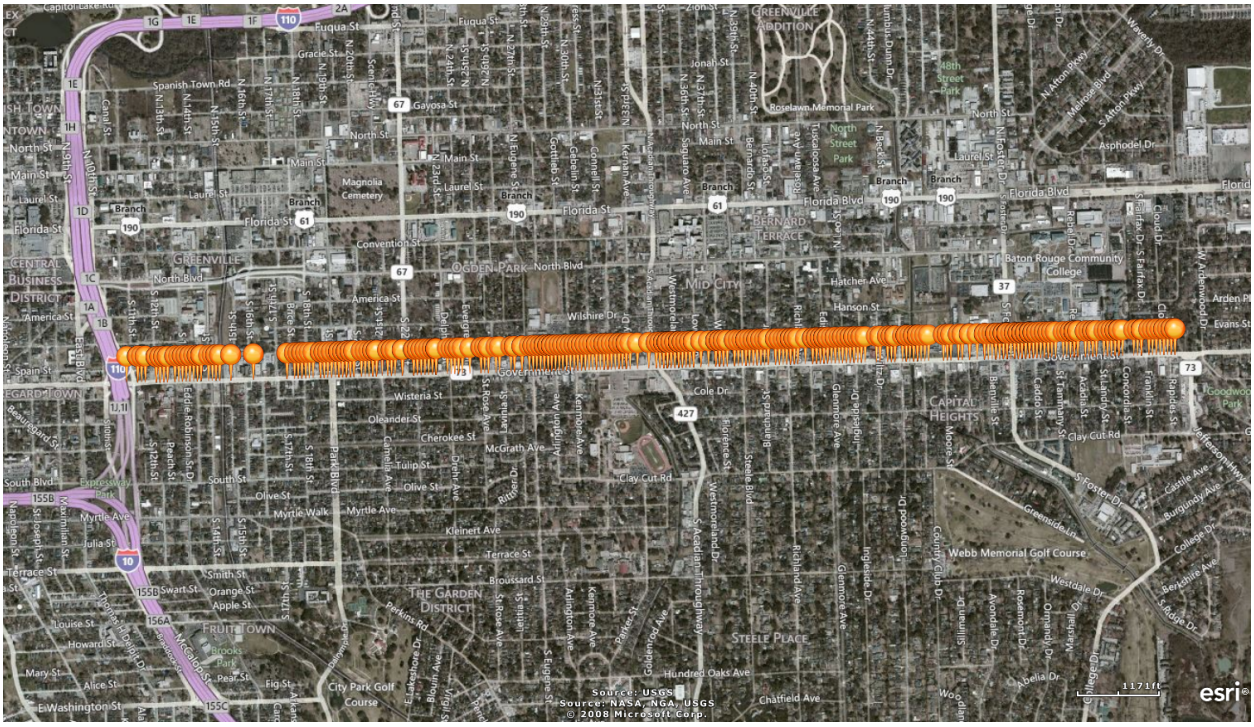


Table 2: Summary of crashes (I-110 Interchange to Jefferson Hwy)

Type of Crash	2008	2009	2010	Total
Fatal	0	0	0	**0**
Injury	98	65	59	**222**
PDO	215	208	167	**590**
Total	**313**	**273**	**226**	**812**

The predominant crash types that have occurred from January 2008 through December 2010 are rear end (39.41%), right angle (21.18%), side swipe-same direction (15.02%) and left turn-opposite direction (8.99%) crashes. All these crash types are overrepresented in the crash data. Few intersections on Government Street have left turn lanes with protected left turn phasing. **Table 3 and Table 4** show the average percentages of crashes by manner of collision and also crash severities for all crashes respectively. The percentages highlighted in yellow show the crash types that are overrepresented, i.e. higher than statewide averages. **Figure 12** shows the variation in crashes by time of day. The two highest peaks occur at 4pm (94 crashes) and 1pm (87 crashes).

Table 3: Average Percentages by Manner of Collision, All Crashes (I-110 Interchange to Jefferson Hwy)

Type of Collision	Crash Frequency	Percentage	Statewide Average
Head on	6	0.74%	0.98%
Left Turn-Angle	8	0.99%	3.86%
Left Turn-Opposite Direction	73	8.99%	6.11%
Left Turn-Same Direction	14	1.72%	2.04%
Non Collision w/ MV	18	2.22%	4.49%
Other	60	7.39%	10.14%
Rear End	320	39.41%	37.71%
Right Turn-Angle	9	1.11%	17.61%
Right Turn-Opposite Direction	1	0.12%	0.40%
Right Angle	172	21.18%	17.61%
Side Swipe - Opposite Direction	9	1.11%	0.90%
Side Swipe -Same Direction	122	15.02%	14.16%

Table 4: Average Severities (I-110 Interchange to Jefferson Hwy)

Type of Crash	Crash Frequency	Percentage	Statewide Average
Fatal Crashes	0	0.00%	0.20%
Injury Crashes	222	27.34%	30.10%
PDO Crashes	590	72.66%	69.70%

Figure 12: Variation in Crashes by Time of Day

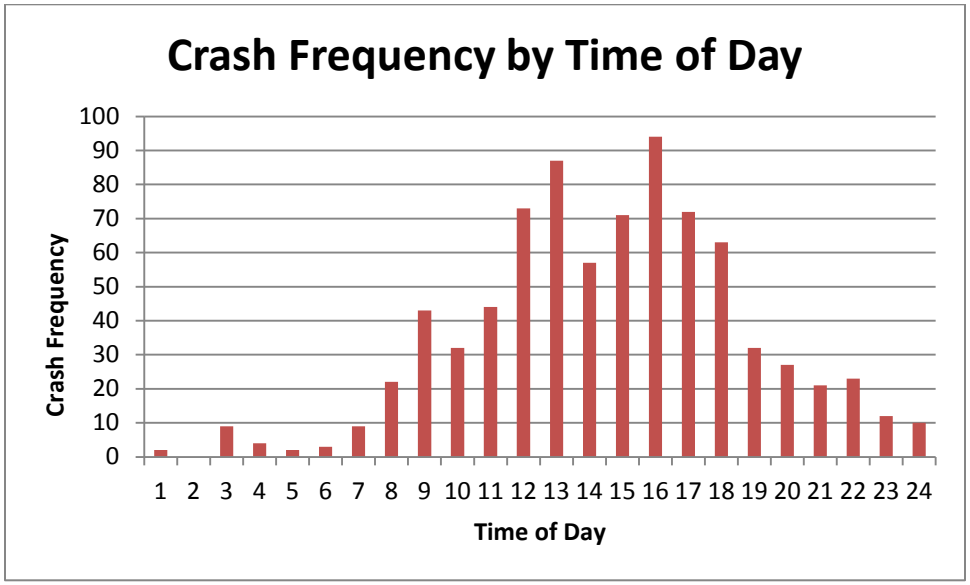


Figure 13 through Figure 18 show the crash frequency over the same three year period along the corridor for total, rear end, side swipe same direction, side swipe opposite direction, right angle and left turn opposite direction crashes.

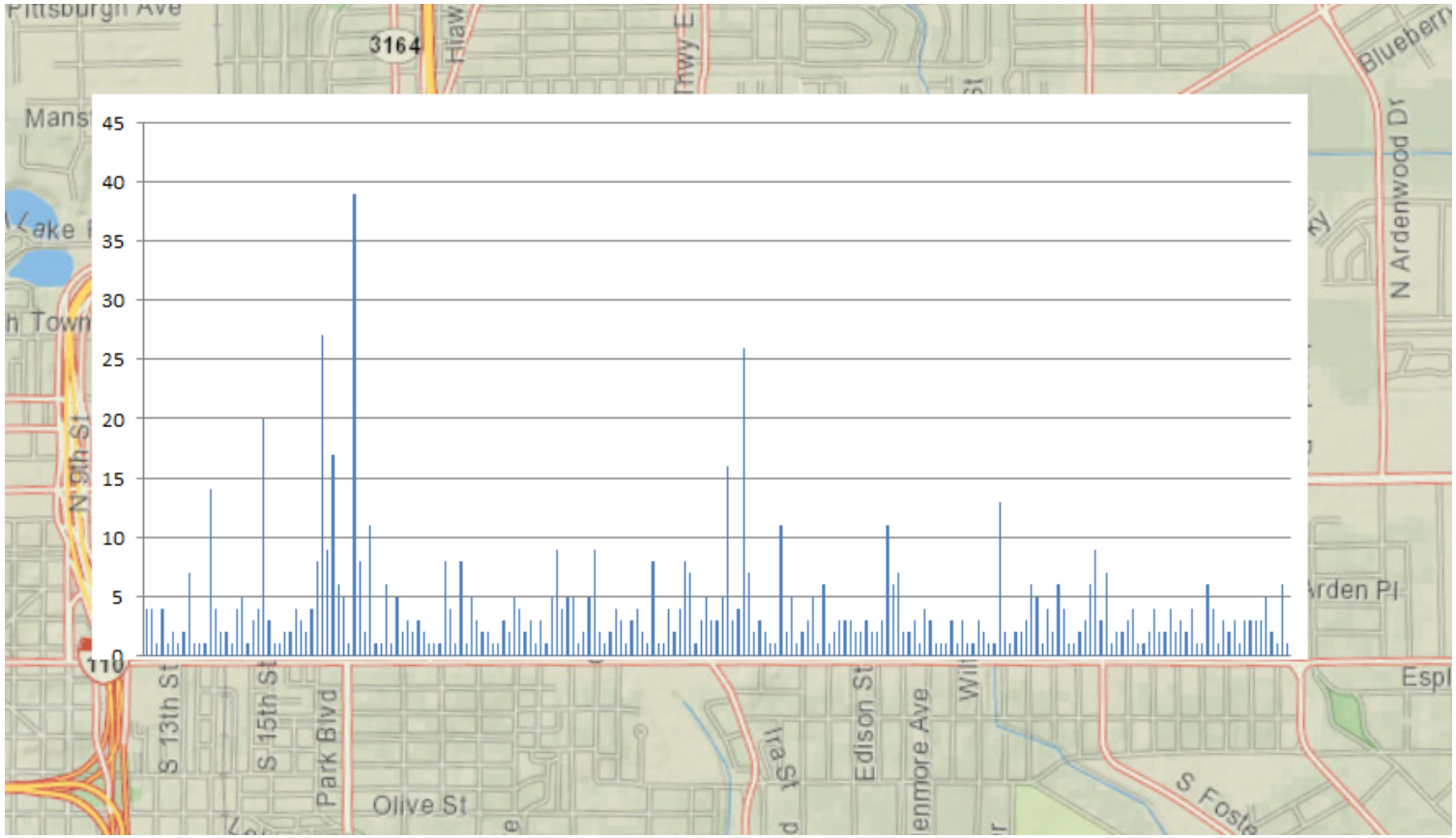


Figure 13: Frequency of Total Crashes in the Corridor

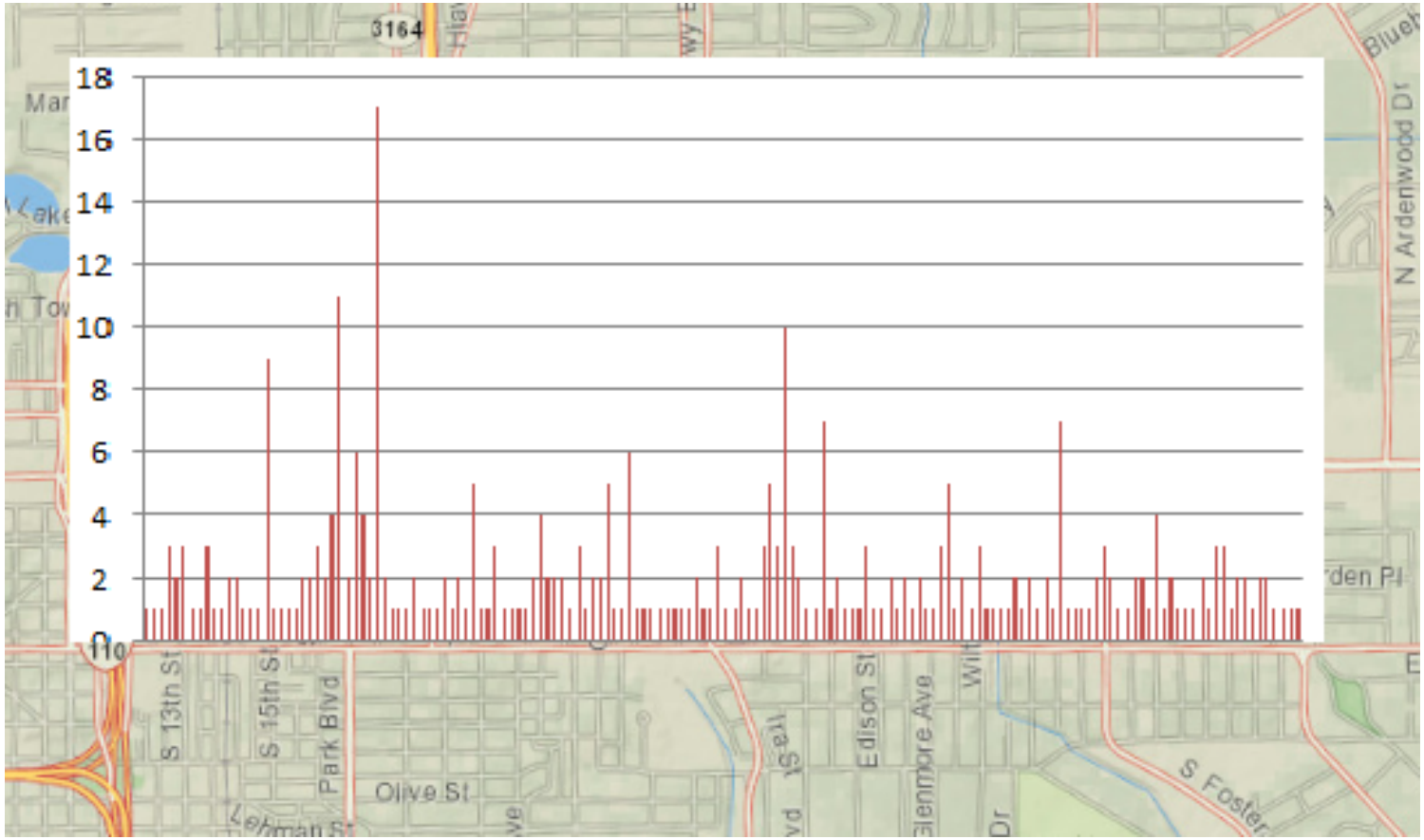


Figure 14: Frequency of Rear End Crashes in the Corridor

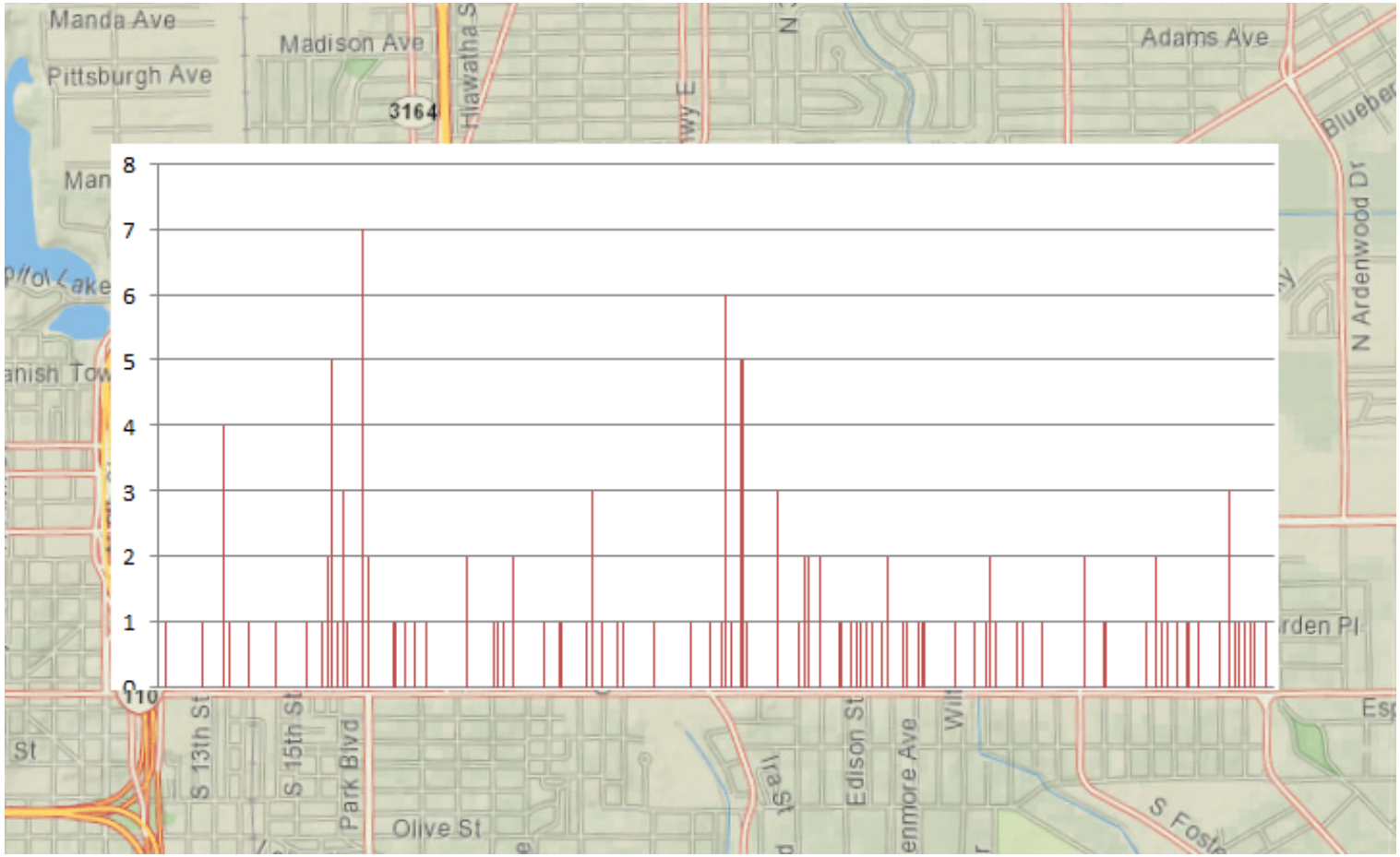


Figure 15: Frequency of Side Swipe Same Direction Crashes in the Corridor

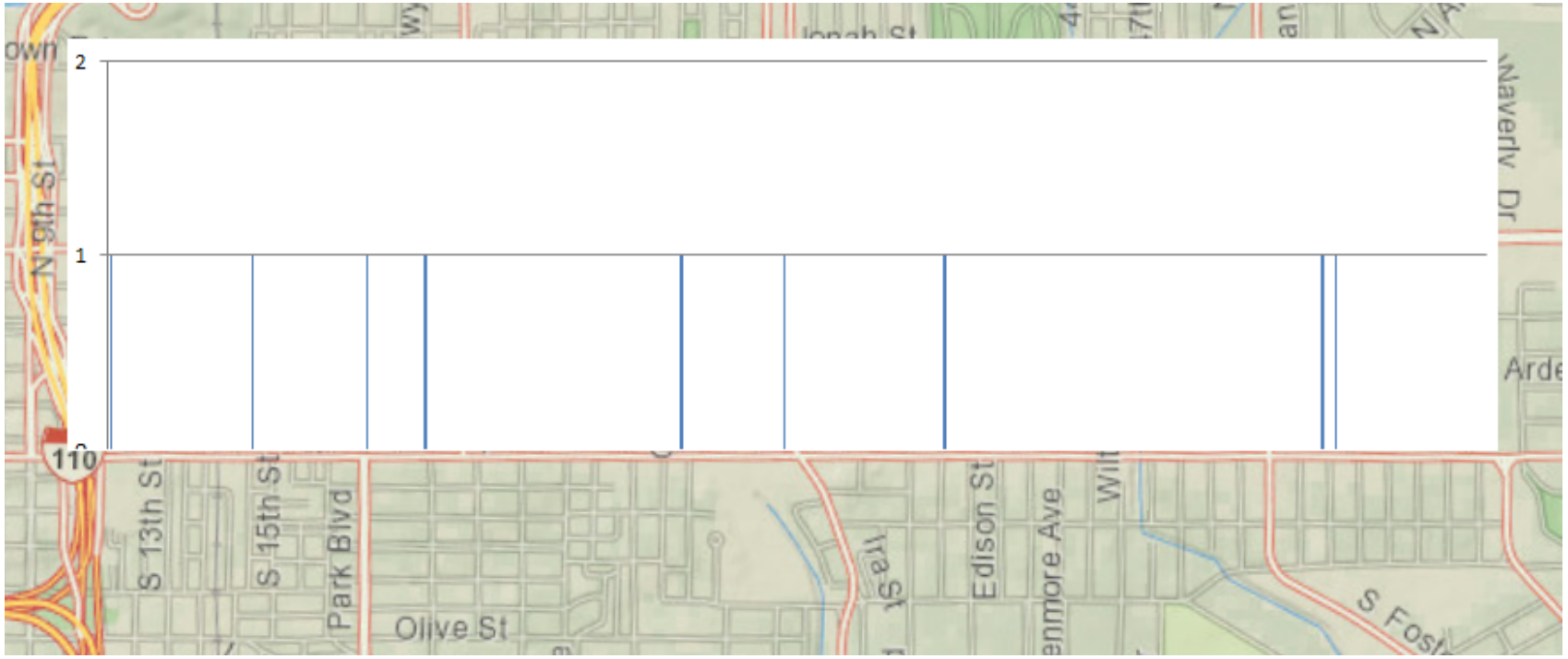


Figure 16: Frequency of Side Swipe Opposite Direction Crashes in the Corridor

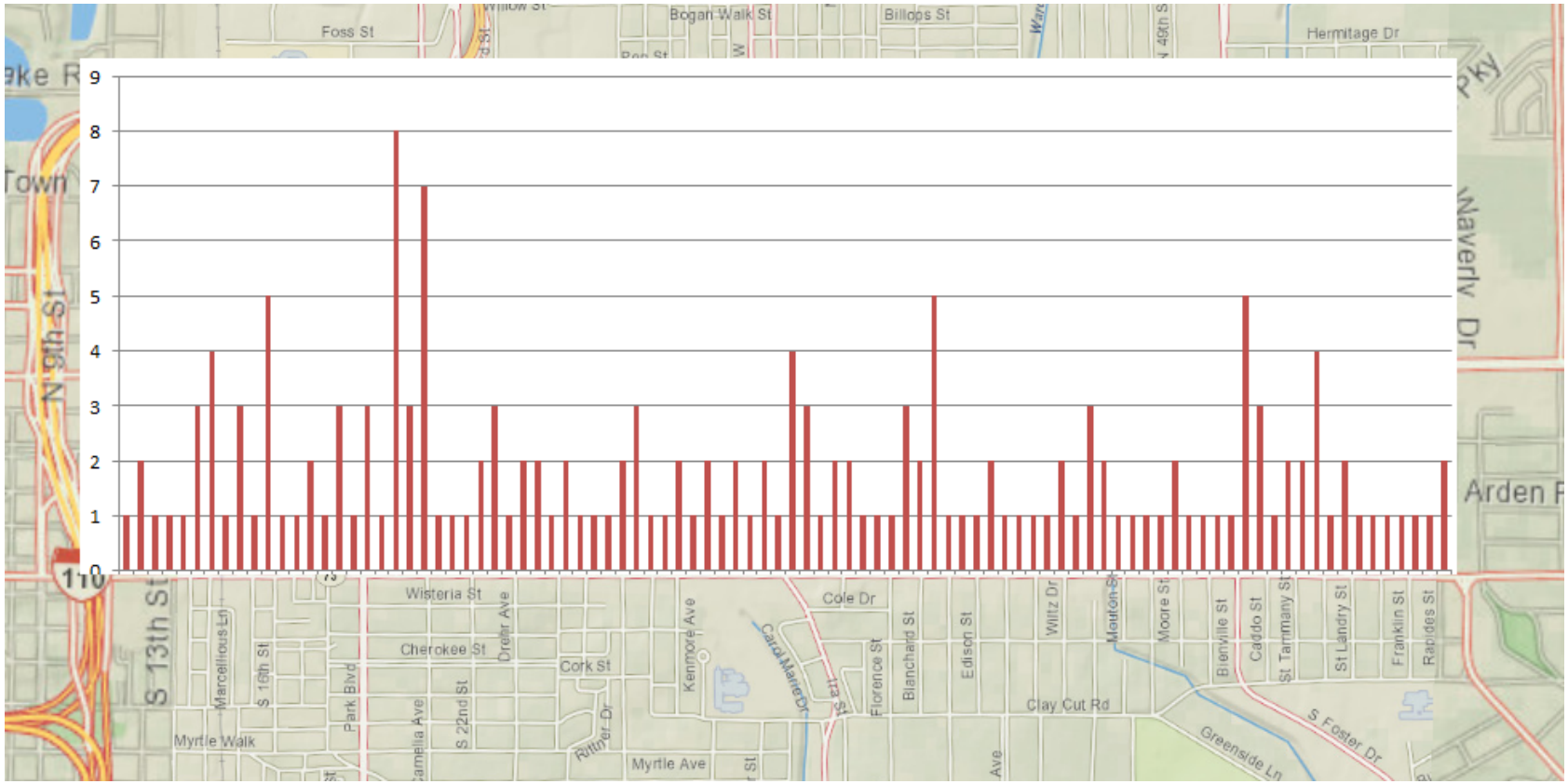


Figure 17: Frequency of Right Angle Crashes in the Corridor

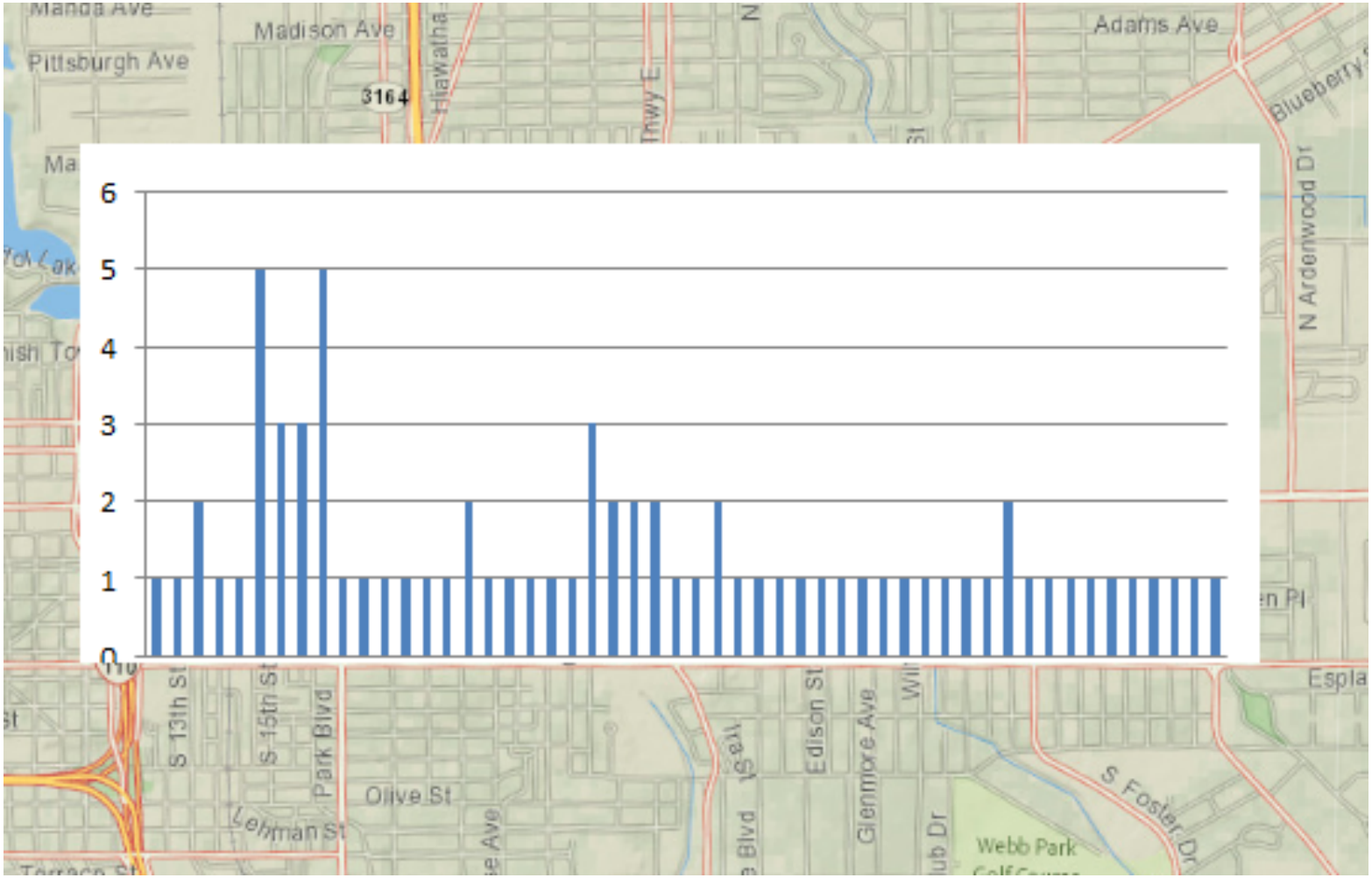


Figure 18: Frequency of Left Turn Opposite Direction Crashes in the Corridor

Table 5 shows that crashes have predominantly occurred at intersections. Over 95% of crashes occurred at intersections which exceeds the statewide average of 51.9%. It should be noted that crashes that occur within 150 feet of an intersection are assumed to be intersection related crash and count towards "intersection crashes." Government Street has many short segments with an average segment length of 254 feet within the project scope. This implies that on the average crashes occurring on segments would be at least 150 feet from one intersection or the adjacent intersection. This explains the very high proportion of intersection crashes in this corridor.

Table 5: Average Percentages by Type of Crash, All Crashes (I-110 Interchange to Jefferson Hwy)

Type of Crash	Crash Frequency	Percentage	Statewide Average
Roadway Departure	6	0.74%	3.12%
Intersection Crashes	778	95.81%	51.97%
Night Crashes	144	17.73%	21.73%
Alcohol Involved	18	2.23%	3.33%
Wet Surface	124	15.27%	15.32%

Table 6 shows the average percentages of crashes by manner of collision for non-intersection crashes. Left turn opposite direction crashes constitute 8.82% of crashes and exceed the statewide average of 2.75%. Similarly left turn same direction crashes and right angle crashes are respectively 5.88% and 17.65%, both exceeding the statewide average of 1.74% and 10.47%. These three types of collisions (left turn opposite direction, left turn same direction and right angle) are overrepresented in the non-intersection crashes that occurred on Government Street.

Table 6: Average Percentages by Manner of Collision, Non-intersection Crashes (I-110 Interchange to Jefferson Hwy)

Type of Collision (non-Intersection)	Crash Frequency	Percentage	Statewide Average
Left Turn - Opposite Direction	3	8.82%	2.75%
Left Turn - Same Direction	2	5.88%	1.74%
Non Collision w/ MV	2	5.88%	6.26%
Other	2	5.88%	9.22%
Rear End	14	41.18%	46.18%
Right Angle	6	17.65%	10.47%
Side Swipe - Same Direction	5	14.71%	17.46%

Crash distribution by manner of collision at intersections is summarized **Table 7**. Rear end, side swipe opposite direction, and side swipe same direction crashes constitute respectively 39.33%, 1.16% and 15.04%. The above listed manner of collisions exceeds the respective statewide averages of 29.87%, 0.74% and 11.12%. Therefore these crashes are overrepresented.

Table 7: Average Percentages by Manner of Collision, Intersection Crashes (I-110 Interchange to Jefferson Hwy)

Type of Collision (Intersection)	Crash Frequency	Percentage	Statewide Average
Head on	6	0.77%	1.00%
Left Turn-Angle	8	1.03%	5.20%
Left Turn-Opposite Direction	70	9.00%	9.20%
Left Turn-Same Direction	12	1.54%	2.33%
Non Collision w/ MV	16	2.06%	2.85%
Other	58	7.46%	10.99%
Rear End	306	39.33%	29.87%
Right Turn-Angle	9	1.16%	1.96%
Right Turn-Opposite Direction	1	0.13%	0.53%
Right Angle	166	21.34%	24.21%
Side Swipe - Opposite Direction	9	1.16%	0.74%
Side Swipe -Same Direction	117	15.04%	11.12%

3.1.1 Crash Rate – Tenths

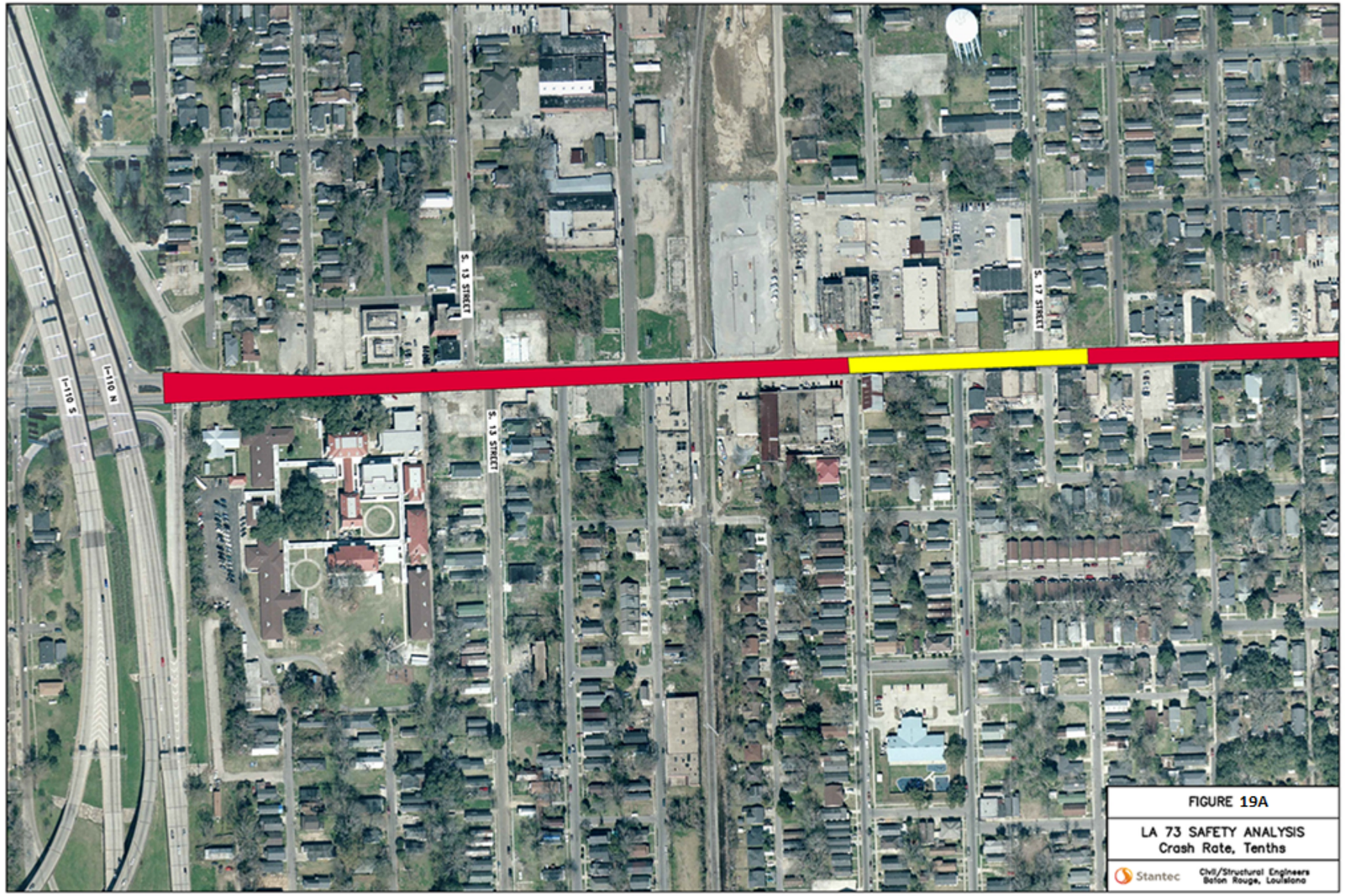
The crash rates for the various segments in the corridor were analyzed and summarized in **Table 8** which shows the outcomes of the analysis for each segment and **Figure 19** shows a schematic diagram of the segments with abnormal crashes.

Table 8: Crash Rate, Tenths (I-110 Interchange to Jefferson Hwy)

Log mile	Crashes	AADT*	Length	VMT	Crash Rate	2x Statewide Average
5.33-5.43	27	22123	0.1	807490	11.15	2.14
5.43-5.53	25	21492	0.1	784458	10.62	2.14
5.53-5.63	13	21296	0.1	777304	5.57	2.14
5.63-5.73	52	21054	0.1	768471	22.56	2.14
5.73-5.83	40	20208	0.1	737592	18.08	2.14
5.83-5.93	18	20179	0.1	736534	8.15	2.14
5.93-6.03	18	20072	0.1	732628	8.19	2.14
6.03-6.13	26	20011	0.1	730402	11.87	2.14
6.13-6.23	21	19991	0.1	729672	9.59	2.14
6.23-6.33	5	19782	0.1	722043	2.31	2.14
6.33-6.43	28	20007	0.1	730256	12.78	2.14
6.43-6.53	25	20150	0.1	735475	11.33	2.14
6.53-6.63	30	20293	0.1	740695	13.50	2.14
6.63-6.73	34	20451	0.1	746462	15.18	2.14
6.73-6.83	15	20484	0.1	747666	6.69	2.14
6.83-6.93	15	20117	0.1	734271	6.81	2.14
6.93-7.03	34	19305	0.1	704633	16.08	2.14
7.03-7.13	4	18024	0.1	657876	2.03	2.14
7.13-7.23	10	17318	0.1	632107	5.27	2.14
7.23-7.33	23	18186	0.1	663789	11.55	2.14
7.33-7.43	6	17321	0.1	632217	3.16	2.14
7.43-7.53	4	16955	0.1	618858	2.15	2.14
7.53-7.63	22	16588	0.1	605462	12.11	2.14
7.63-7.73	16	16313	0.1	595425	8.96	2.14
7.73-7.83	2	15640	0.1	570860	1.17	2.14
7.83-7.93	11	15145	0.1	552793	6.63	2.14
7.93-8.03	11	14794	0.1	539981	6.79	2.14
8.03-8.13	23	14489	0.1	528849	14.50	2.14
8.13-8.23	1	14489	0.1	528849	0.63	2.14

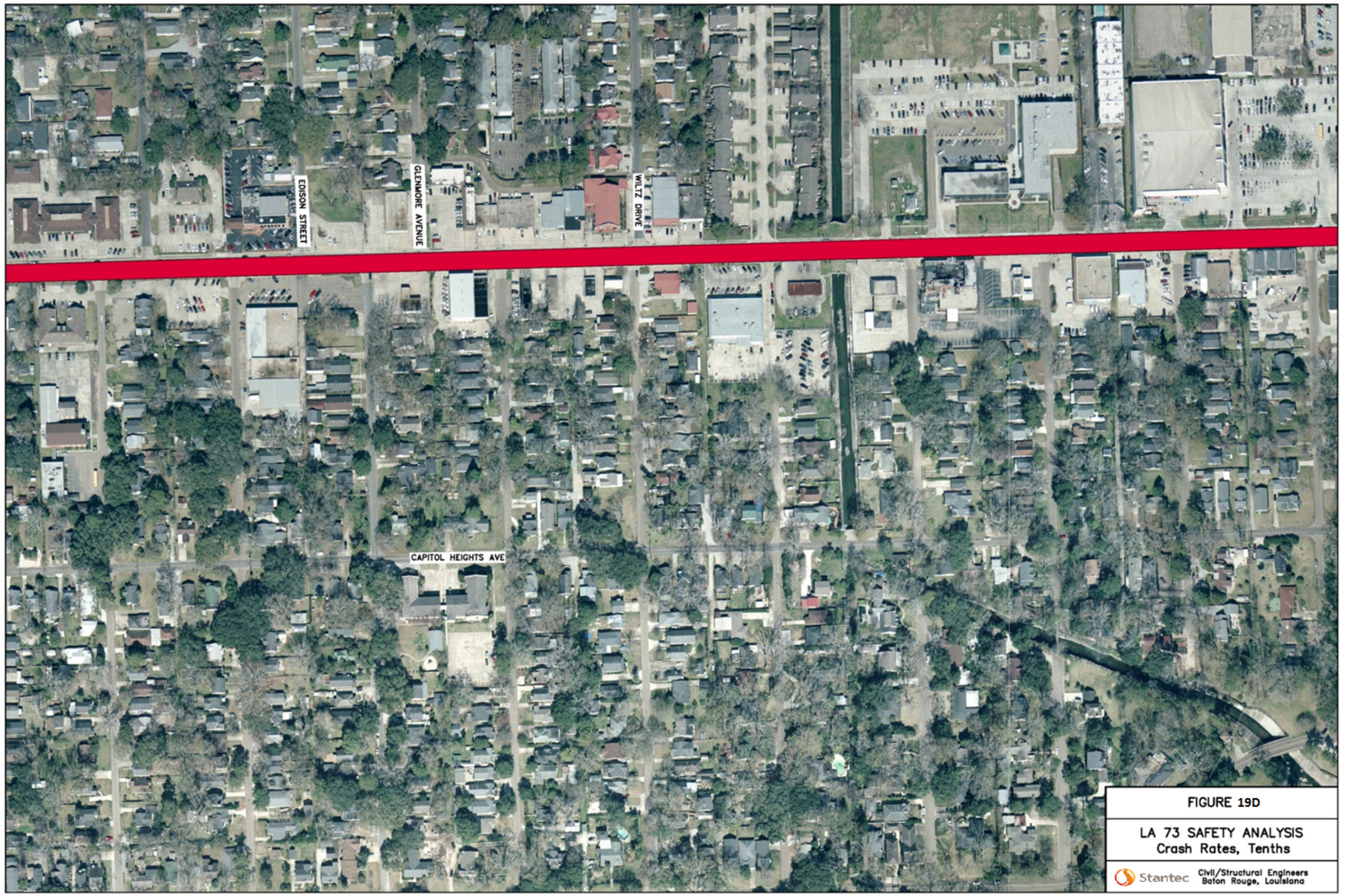
* The ADTs used in all the analysis were based on data from count stations or estimated by interpolating data from count stations. The ADTs therefore may not be as accurate as what would have been obtained from permanent count stations at each required location.

Figure 19: Crash Rate (Tenths)




S. 19TH STREET
S. 21ST STREET
WISTERIA STREET
S. EUGENE STREET
FIGURE 19B
LA 73 SAFETY ANALYSIS
Crash Rate, Tenths
Stantec
Civil/Structural Engineers
Baton Rouge, Louisiana


BEVERLY DRIVE
KENMORE AVENUE
ACADIAN THRUWAY
FIGURE 19C
LA 73 SAFETY ANALYSIS
Crash Rate, Tenths
Stantec
Civil/Structural Engineers
Baton Rouge, Louisiana


EDISON STREET
GLENMORE AVENUE
WILTZ DRIVE
CAPITOL HEIGHTS AVE
FIGURE 19D
LA 73 SAFETY ANALYSIS
Crash Rates, Tenths
Stantec
Civil/Structural Engineers
Baton Rouge, Louisiana


S. FOSTER DRIVE
COMMUNITY COLLEGE DRIVE
GOVERNNMENT STREET
JEFFERSON HWY
FIGURE 19E
LA 73 SAFETY ANALYSIS
Crash Rates, Tenths
Stantec
Civil/Structural Engineers
Baton Rouge, Louisiana

3.2 JEFFERSON HIGHWAY TO LOBDELL AVENUE

The safety performance of the project limits from Jefferson Highway to Lobdell Avenue performed by LADOTD (See **Appendix A** for full report) is summarized in this section. This analysis used data from 2010-2012 and exhibits similar safety performance characteristics as the limits from I-110 interchange to Jefferson Highway. The crash rates from Jefferson Highway to Lobdell Avenue are higher than two times the statewide average and therefore the crash performance is abnormal. **Table 10 and Table 11** summarize the type of collisions that have occurred and show the overrepresented collisions highlighted in red. **Figure 20** shows the segments with abnormal crash rates from Jefferson Highway to Lobdell Avenue.

Table 9: Crash Rate Analysis (Jefferson Hwy to Lobdell Ave)

Segment	Total Crashes	AADT	Length	Crash Rate	2x State Avg.
GOVERNMENT(JEFFERSON HWY-TO-ARDENWOOD)	12	8419	0.2	6.51	2.34
GOVERNMENT(ARDENWOOD-TO-LOBDELL)	34	6283	0.92	5.37	2.34
Total =	46				

Table 10: Type of Collision Analysis (Jefferson Hwy to Ardenwood Drive)

Type of Collision	Number of Crashes	Jefferson Hwy to Ardenwood Dr.	Urban State Average
Non Coll	1	8.33%	3.86%
Rear End	4	33.33%	39.85%
Head On	0	0.00%	0.96%
Rt Angle	3	25.00%	18.25%
Left Turn-e	0	0.00%	3.16%
Left Turn-f	0	0.00%	7.27%
Left Turn-g	1	8.33%	2.26%
Right Turn-h	0	0.00%	2.15%
Right Turn-i	0	0.00%	0.48%
S Swipe (sd)	3	25.00%	13.02%
S Swipe (od)	0	0.00%	1.02%
Other	0	0.00%	7.44%
Total =	12		

Table 11: Type of Collision Analysis (Ardenwood Dr. to Lobdell Ave.)

Type of Collision	Number of Crashes	Ardenwood Dr. to Lobdell Ave.	Urban State Average
Non Coll	1	2.94%	3.86%
Rear End	11	91.67%	39.85%
Head On	1	8.33%	0.96%
Rt Angle	7	58.33%	18.25%
Left Turn-e	1	8.33%	3.16%
Left Turn-f	2	16.67%	7.27%
Left Turn-g	0	0.00%	2.26%
Right Turn-h	1	8.33%	2.15%
Right Turn-i	0	0.00%	0.48%
S Swipe (sd)	7	58.33%	13.02%
S Swipe (od)	0	0.00%	1.02%
Other	3	8.82%	7.44%
Total =	34		

Figure 20: Crash Rates (Jefferson Highway to Lobdell Avenue)

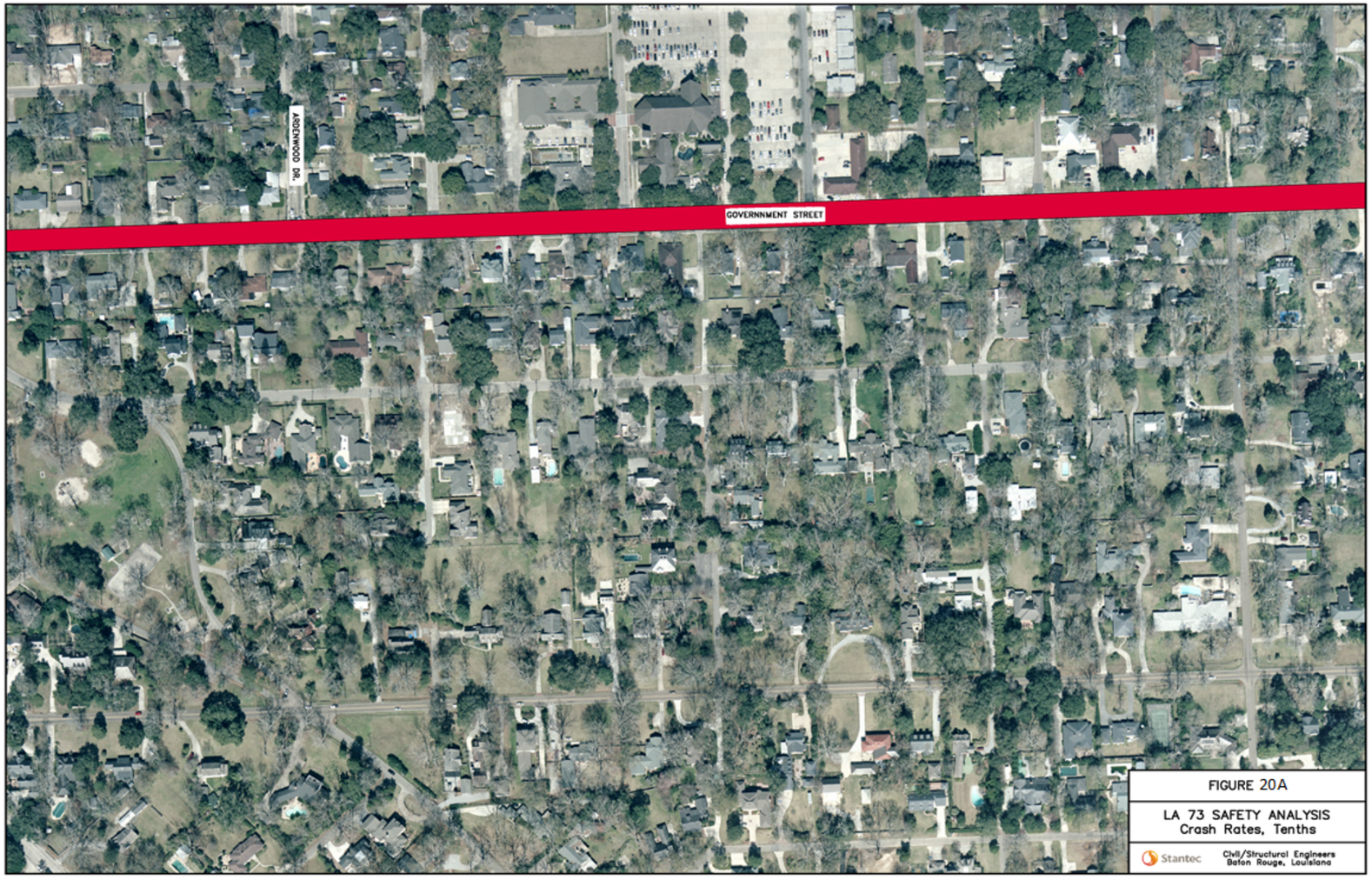


FIGURE 20B

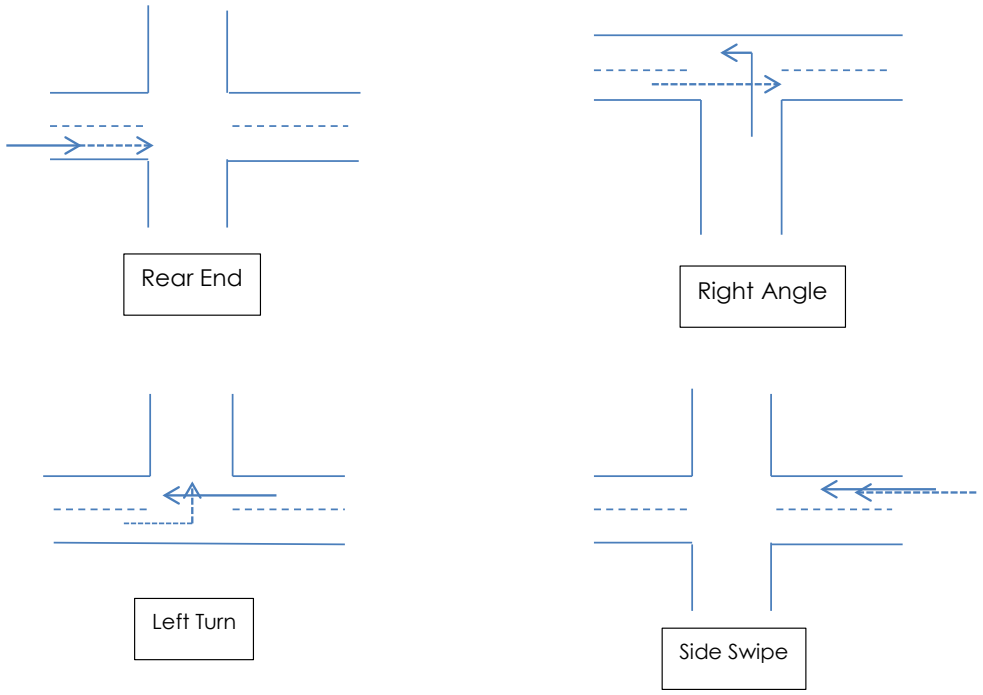
LA 73 SAFETY ANALYSIS
Crash Rates, Tenths

Stantec Civil/Structural Engineers Baton Rouge, Louisiana

3.3 SUMMARY OF FINDINGS

The types of crashes observed on Government Street that are overrepresented in the crash data are rear end, left turn, right angle and side swipe related crashes. These crashes are mostly "property damage only" (PDO) crashes and no fatality has occurred during the time frame under analysis. **Figure 21** shows a schematic of the crash types that are overrepresented in the crashes that have occurred on Government Street.

Figure 21: Collision types overrepresented on Government Street



3.3.1 Intersections

Intersection related crashes are also overrepresented and this is attributable to the relatively short segment lengths on Government Street. The intersection at Foster Drive is a "hot spot" and has a crash rate that exceeds two times the statewide average. The predominant crashes at this location are rear end and right angle crashes.

3.3.2 Segments

The crash rate based on tenths shows failure of the entire corridor with the exception of the following segments: S. 17th Street to S. 15th Street and the segment leading up to the I-110 ramp. This is shown in Error! Reference source not found..

3.4 HSM ANALYSIS

The highway safety manual (HSM) provides analytical tools and techniques for quantifying potential safety benefits for planning, design, operations and maintenance. The predictive method discussed in the manual is intended to provide a structured methodology to estimate crashes by total crashes, crash severity, or collision type on a roadway. The models for the predictive analysis were developed using sites of similar characteristics from around the country. The model therefore should be adjusted using calibration factors to account for specific site conditions and local conditions. LADOTD provided the state specific calibration factors have been developed to use with this HSM analysis.

The HSM was used to evaluate predicted crashes for the projects limits from East Boulevard to Lobdell Avenue consisting of several intersections (both signalized and unsignalized) and segments with a total length of 4.2 miles. The number of crashes predicted by the model for the existing roadway and the proposed upgrades using the HSM worksheet are summarized in **Table 12 through Table 17** (See **Appendix B** for HSM Worksheets). The 3-lane section with TWLTL appears to perform better across all metrics (fatal, injury, PDO) for the analysis period with lower frequency of crashes than the existing undivided 4-lane section. This observation corroborates the benefits that are reported in the literature when similar road diets have been implemented elsewhere.

The predicted crashes for the no-build scenario and five other configurations of the road diet have been summarized below in **Table 12 through Table 17.** The results show that the road diet reduces crashes. The three-year average for the no-build scenario is 62.8 crashes/year and for the alternatives with road diets it ranges from 29.0 – 37.9 crashes/year. This represents a reduction in crashes ranging from 39.6% - 53.8%.

Table 12: Predicted Crashes (No Build)

No Build												
	2014			2015			2016			3-Year Average		
	Total	FI	PDO	Total	FI	PDO	Total	FI	PDO	Total	FI	PDO
Predicted	61.2	20.1	43.5	62.8	20.5	44.6	64.3	21.0	45.8	62.8	20.5	44.6
Pedestrian	1.7	1.7	0.0	1.7	1.7	0.0	1.7	1.7	0.0	1.7	1.7	0.0
Bike	0.4	0.4	0.0	0.4	0.4	0.0	0.4	0.4	0.0	0.4	0.4	0.0

Table 13: Predicted Crashes (Alternative 1)

Alternative 1: Bike Lane												
	2014			2015			2016			3-Year Average		
	Total	FI	PDO	Total	FI	PDO	Total	FI	PDO	Total	FI	PDO
Predicted	29.1	9.4	20.0	27.3	8.8	18.8	30.6	9.9	21.1	29.0	9.3	20.0
Pedestrian	1.4	1.4	0.0	1.4	1.4	0.0	1.4	1.4	0.0	1.4	1.4	0.0
Bike	0.3	0.3	0.0	0.3	0.3	0.0	0.3	0.3	0.0	0.3	0.3	0.0

Table 14: Predicted Crashes (Alternative 2)

Alternative 2: Bike Lane; Bus Turnouts with Median; On-Street Parking												
	2014			2015			2016			3-Year Average		
	Total	FI	PDO	Total	FI	PDO	Total	FI	PDO	Total	FI	PDO
Predicted	29.3	9.5	20.3	30.1	9.7	20.8	30.8	10.0	21.4	30.1	9.7	20.8
Pedestrian	1.4	1.4	0.0	1.4	1.4	0.0	1.4	1.4	0.0	1.4	1.4	0.0
Bike	0.3	0.3	0.0	0.3	0.3	0.0	0.3	0.3	0.0	0.3	0.3	0.0

Table 15: Predicted Crashes (Alternative 3)

Alternative 3: Bike Lane; Bus Turnouts with No Median; On-Street Parking												
	2014			2015			2016			3-Year Average		
	Total	FI	PDO	Total	FI	PDO	Total	FI	PDO	Total	FI	PDO
Predicted	29.3	9.5	20.3	30.1	9.7	20.9	30.8	10.0	21.4	30.1	9.7	20.9
Pedestrian	1.4	1.4	0.0	1.4	1.4	0.0	1.4	1.4	0.0	1.4	1.4	0.0
Bike	0.3	0.3	0.0	0.3	0.3	0.0	0.3	0.3	0.0	0.3	0.3	0.0

Table 16: Predicted Crashes (Alternative 4)

Alternative 4: On-Street Parking; Bus Turnouts with No Median												
	2014			2015			2016			3-Year Average		
	Total	FI	PDO	Total	FI	PDO	Total	FI	PDO	Total	FI	PDO
Predicted	36.9	12.5	27.7	37.8	12.8	28.4	38.8	13.2	29.1	37.8	12.8	28.4
Pedestrian	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Bike	0.4	0.4	0.0	0.4	0.4	0.0	0.4	0.4	0.0	0.4	0.4	0.0

Table 17: Predicted Crashes (Alternative 5)

Alternative 5: On-Street Parking; Bus Turnouts with Median												
	2014			2015			2016			3-Year Average		
	Total	FI	PDO	Total	FI	PDO	Total	FI	PDO	Total	FI	PDO
Predicted	36.9	12.5	27.7	27.9	9.0	19.3	38.8	13.2	29.2	34.5	11.6	25.4
Pedestrian	1.5	1.5	0.0	1.5	1.4	0.0	1.5	1.5	0.0	1.5	1.4	0.0
Bike	0.4	0.4	0.0	0.4	0.3	0.0	0.4	0.4	0.0	0.4	0.4	0.0

4.0 TRAFFIC ANALYSIS

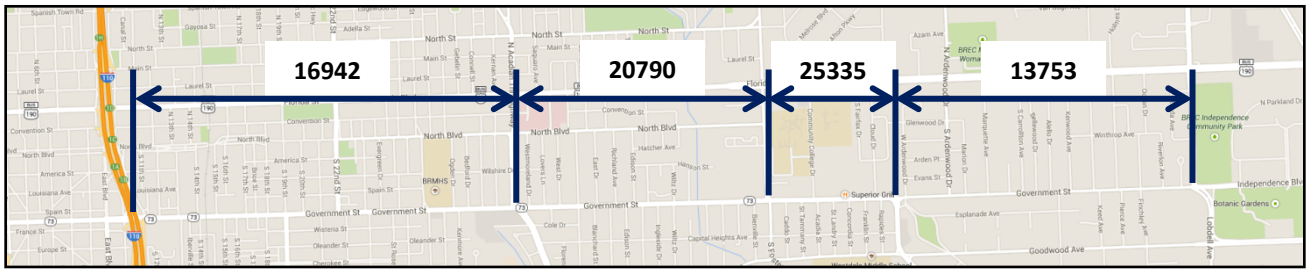
4.1 TRAFFIC COUNTS

Stantec Consulting Services Inc. hired Southern Traffic Services to collect traffic data along Government Street. The collected data include single-day, 24-hour counts at fifteen signalized intersections and 7-day, 24-hour counts at three mid-block locations. The Government Street at Lobdell Avenue intersection was treated as a 7-day, 24-hour count. A separate report will be developed for the Lobdell Avenue intersection to satisfy the Roundabout EDSM. Southern Traffic Services is aware of all of LADOTD's best practices with regard to traffic data collection. No counts were taken on holidays. The single day counts were performed on Tuesdays, Wednesdays, and Thursdays only. The data collection dates were from September 16, 2014 to October 2, 2014.

- Signalized Intersections, Single-Day 24-Hour Counts
    - Government Street @ East Boulevard
    - Government Street @ S. 10th Street west of I-110
    - Government Street @ S. 10th Street east of I-110
    - Government Street @ Eddie Robinson Senior Drive
    - Government Street @ S. 19th Street
    - Government Street @ S. 21st Street
    - Government Street @ S. 22nd Street
    - Government Street @ Eugene Street
    - Government Street @ Hearthstone Drive
    - Government Street @ S. Acadian Throughway
    - Government Street @ Edison Street
    - Government Street @ S. Foster Drive
    - Government Street @ Community College Drive
    - Government Street @ Jefferson Hwy
    - Government Street @ Ardenwood Drive
- Signalized Intersection, 7-Day 24-Hour Count
    - Government Street @ Lobdell Avenue
- Mid-Block Locations, 7-Day 24-Hour Counts
    - Government Street Between I-110 & S. Acadian Throughway
    - Government Street Between S. Acadian Throughway & S. Foster Drive
    - Government Street Between S. Foster Drive & Jefferson Highway

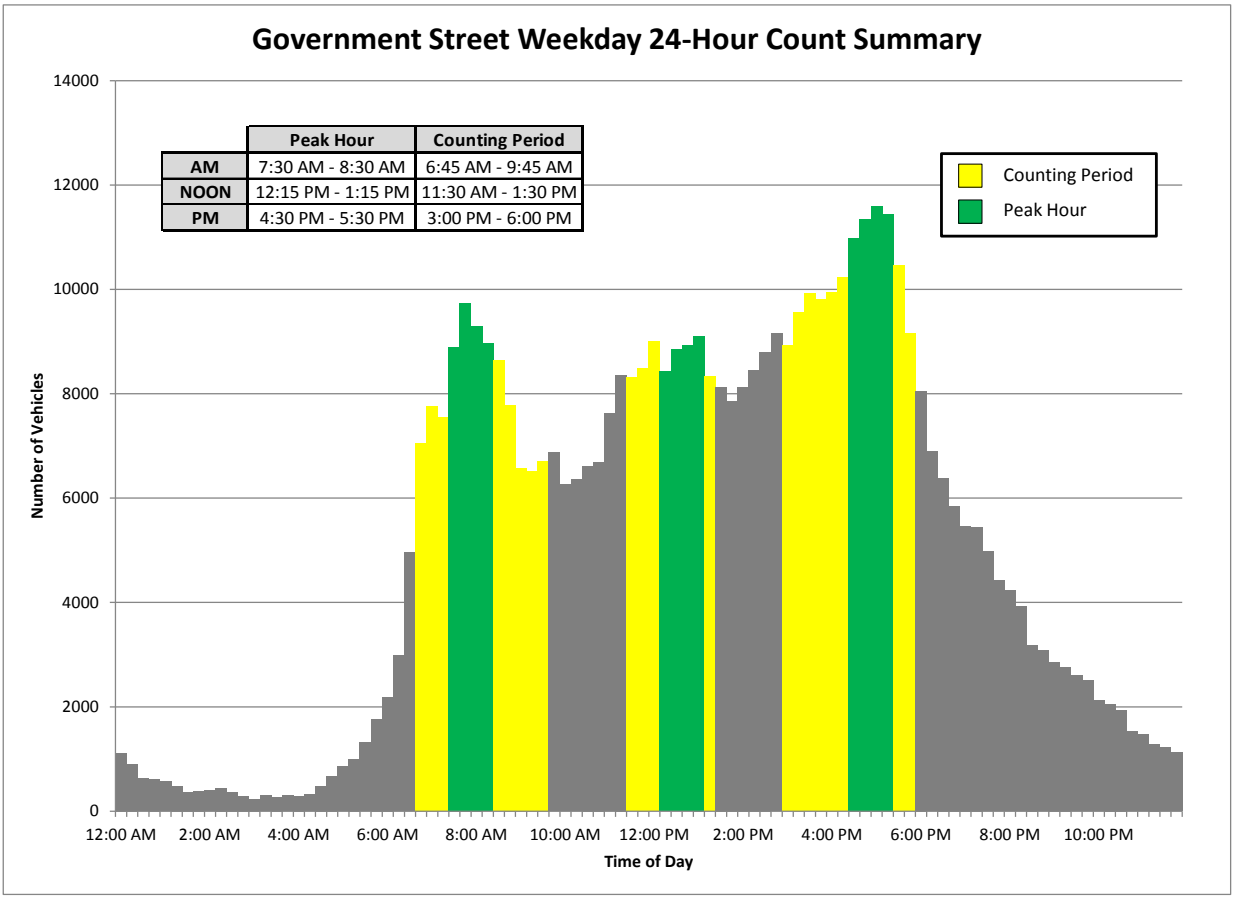
A summary of the Average Daily Traffic (ADT) collected is presented in **Figure 22**.

Figure 22: Government Street ADT Summary



An hourly breakdown of the weekday 24-hour traffic counts is presented in **Figure 23** below. The bar chart combines the count data for all sixteen signalized intersections and the three mid-block locations.

Figure 23: Government Street Weekday 24-Hour Count Summary



Traffic Analysis
September 25, 2015

After a review of the 24-hour traffic counts and with the concurrence of LADOTD, the following time periods were selected for turning movement data collection:

- AM Peak
  - Peak Hour: 7:30 AM – 8:30 AM
  - Counting Period: 6:45 AM – 9:45 AM
- Noon Peak
  - Peak Hour: 12:15 PM – 1:15 PM
  - Counting Period: 11:30 AM – 1:30 PM
- PM Peak
  - Peak Hour: 4:30 PM – 5:30 PM
  - Counting Period: 3:00 PM – 6:00 PM
- Weekend Peak
  - Peak Hour: 11:45 AM – 12:45 PM
  - Counting Period: 11:30 AM – 1:30 PM

Southern Traffic Services, Inc. performed additional turning movement counts at the major studied intersections listed below in October 2014. The counts were performed on Tuesdays, Wednesdays, Thursdays, and Saturdays only between the hours of 6:45 AM - 9:30 AM, 11:30 AM – 1:30 PM, and 3:00 PM – 6:00 PM on weekdays and 11:30 AM – 1:30 PM on weekends. No counts were taken on holidays.

- Government Street at I-110 WB Ramps
- Government Street at Eddie Robinson Sr Drive
- Government Street at Park Boulevard
- Government Street at Camelia Avenue
- Government Street at 22nd Street
- Government Street at S. Eugene Street
- Government Street at Hearthstone Drive
- Government Street at S. Acadian Thruway
- Government Street at Edison Street
- Government Street at S. Foster Drive
- Government Street at Community College Drive
- Government Street at S. Ardenwood Drive
- Government Street at Jefferson Highway
- Government Street at Lobdell Avenue

The traffic volumes for all four peak periods are presented in **Figure 24 through Figure 27**.

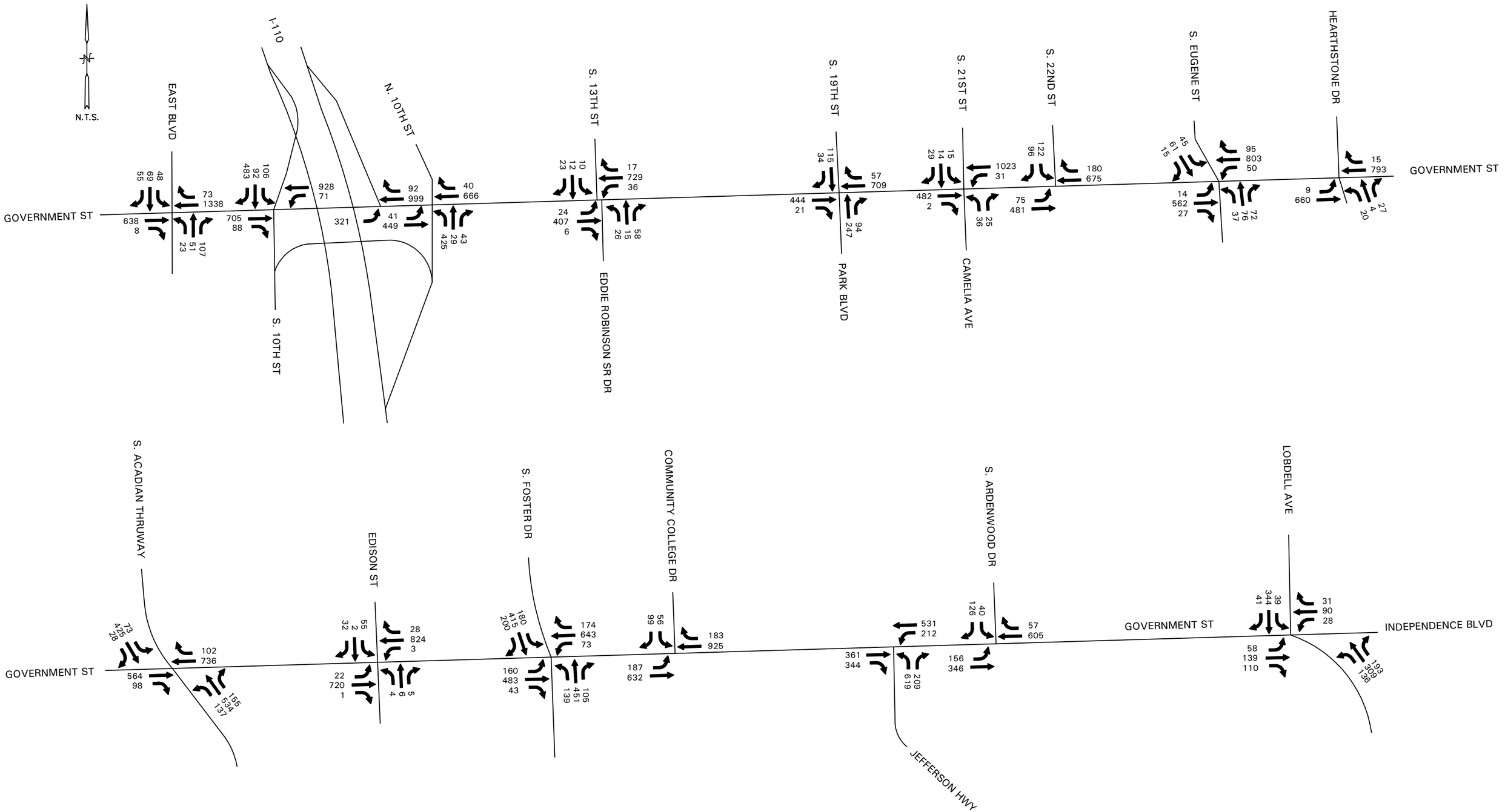


FIGURE 24
Volumes - 2014 AM Existing

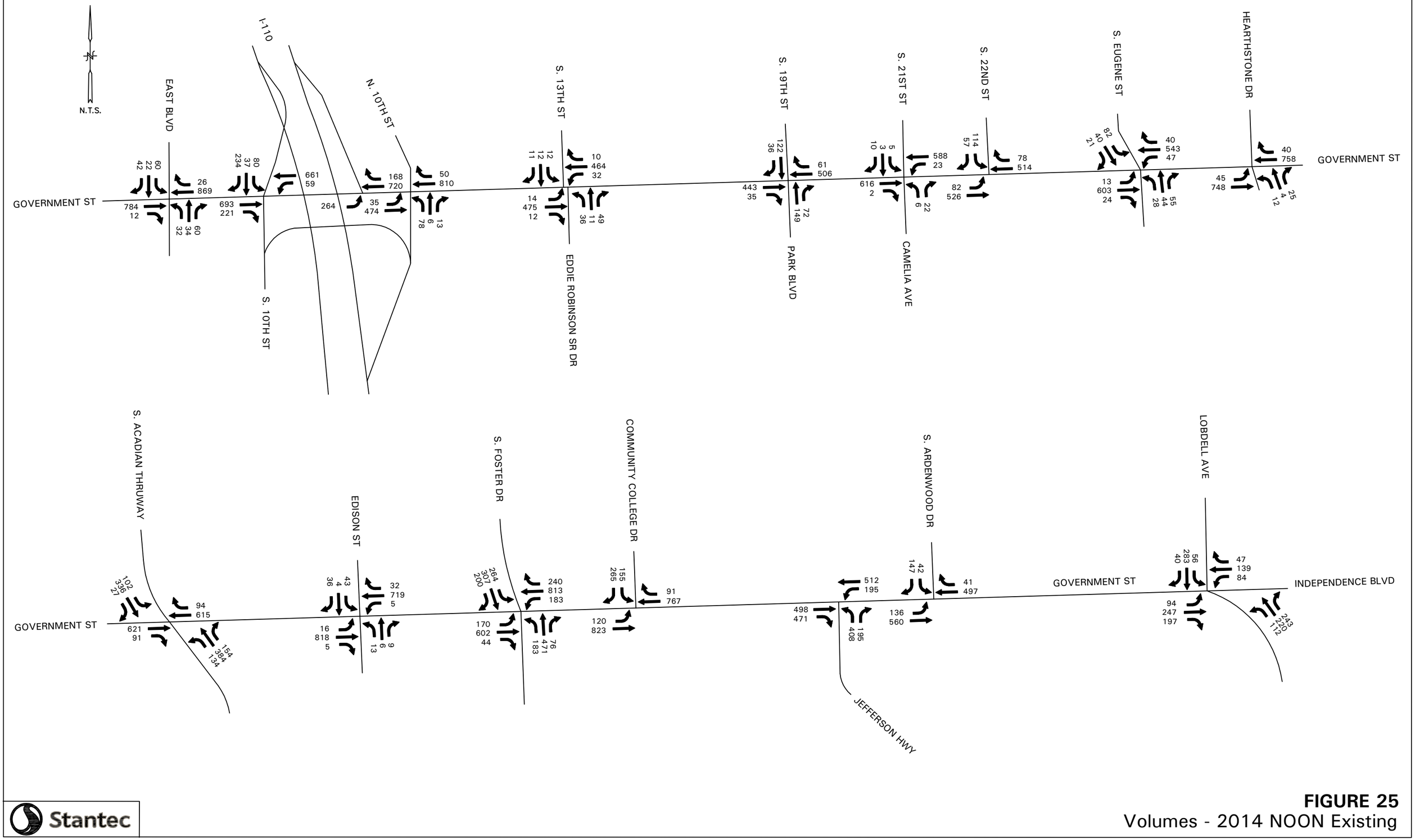


FIGURE 25
Volumes - 2014 NOON Existing

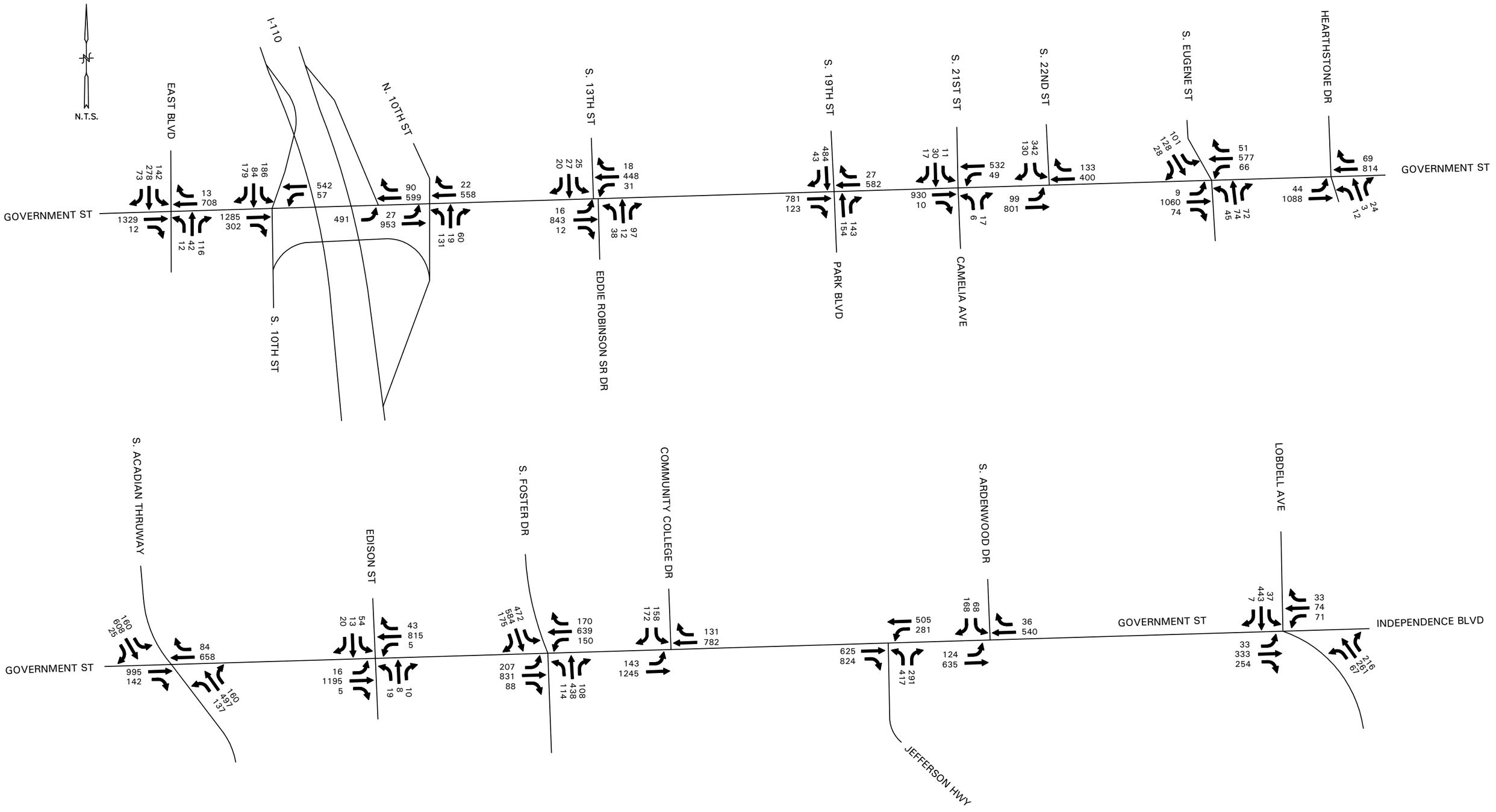


FIGURE 26
Volumes - 2014 PM Existing

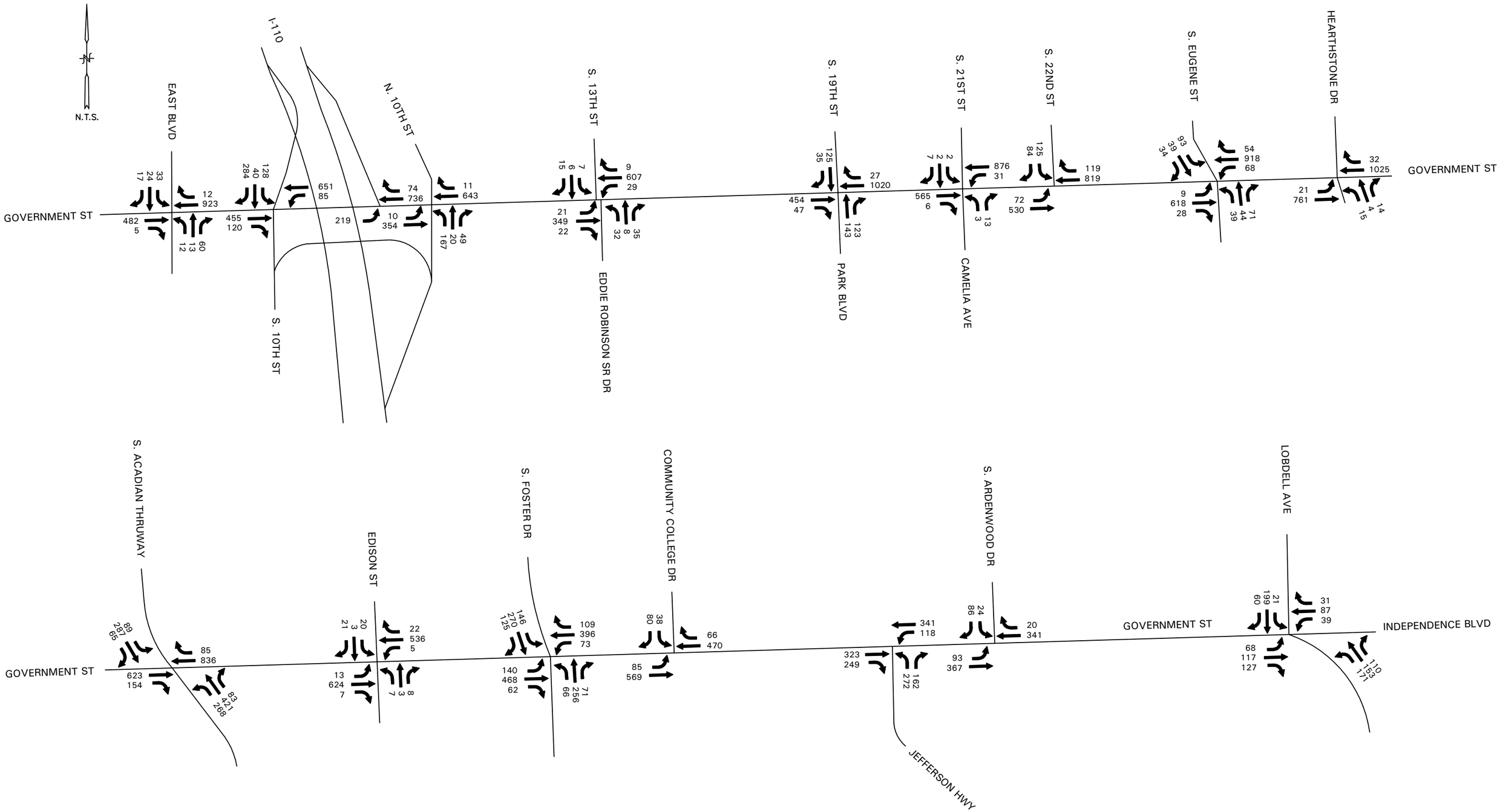


FIGURE 27
Volumes - 2014 WEEKEND Existing

4.2 PROPOSED TRAFFIC VOLUMES

In addition to the road diet, the proposed scenario would allow new left turn movements on Government Street at Park Boulevard and S. Acadian Thruway—two intersections which currently do not allow left turns. The left turns at Park Boulevard have been treated as additional volumes at the intersection. The left turns at S. Acadian Thruway have been assumed as 10% of the through volumes at the intersection. During the PM peak hour only, there has been an additional relocation of 100 vehicles from eastbound Government Street to North Boulevard, joining back up with Government Street at S. Foster Drive. This rerouting is supported by the regional planning model, discussed in **Section 4.4**. The traffic volumes for all four peak periods are presented in **Figure 28 through Figure 31**.

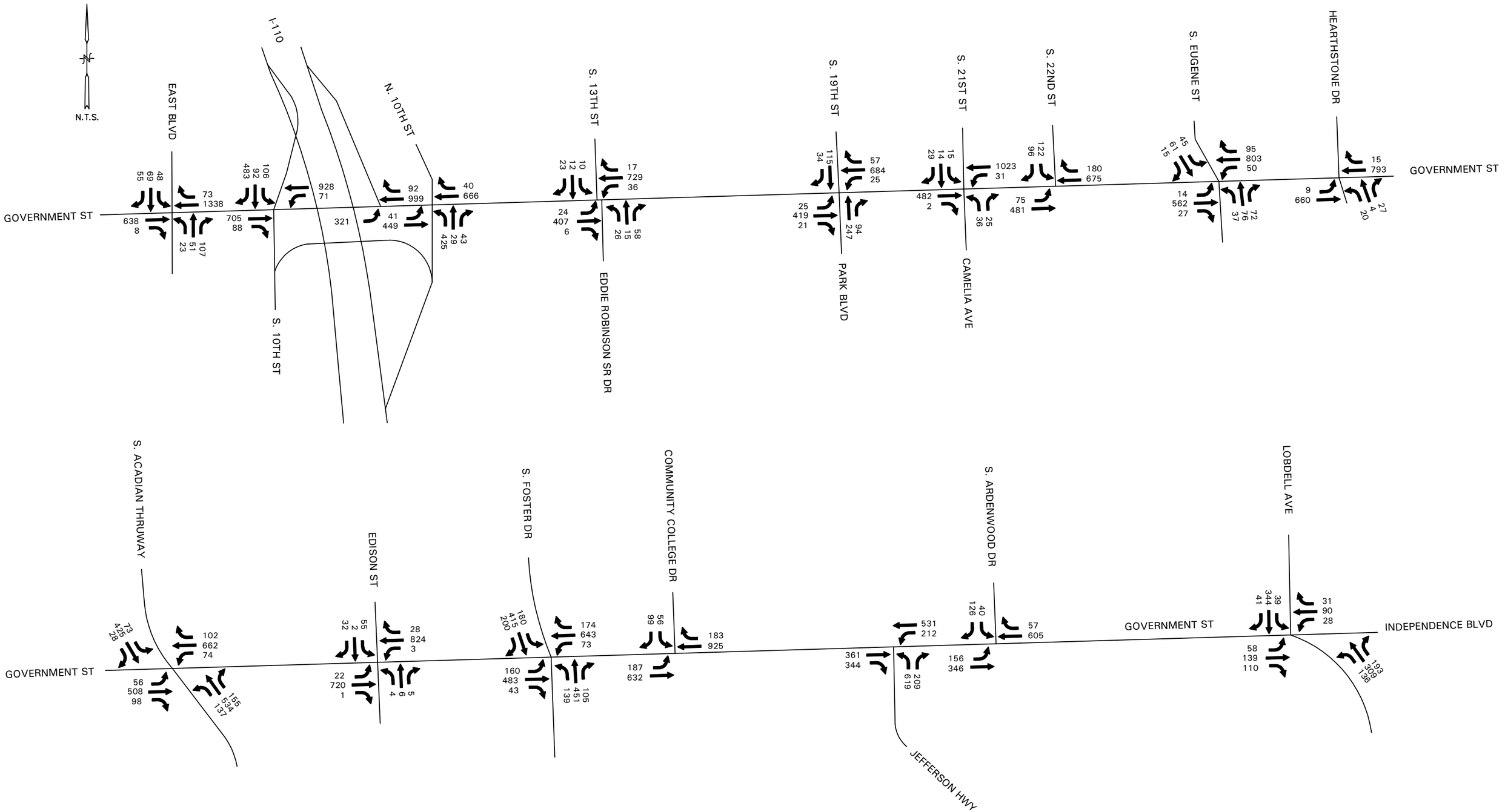


FIGURE 28
Volumes - 2014 AM Proposed

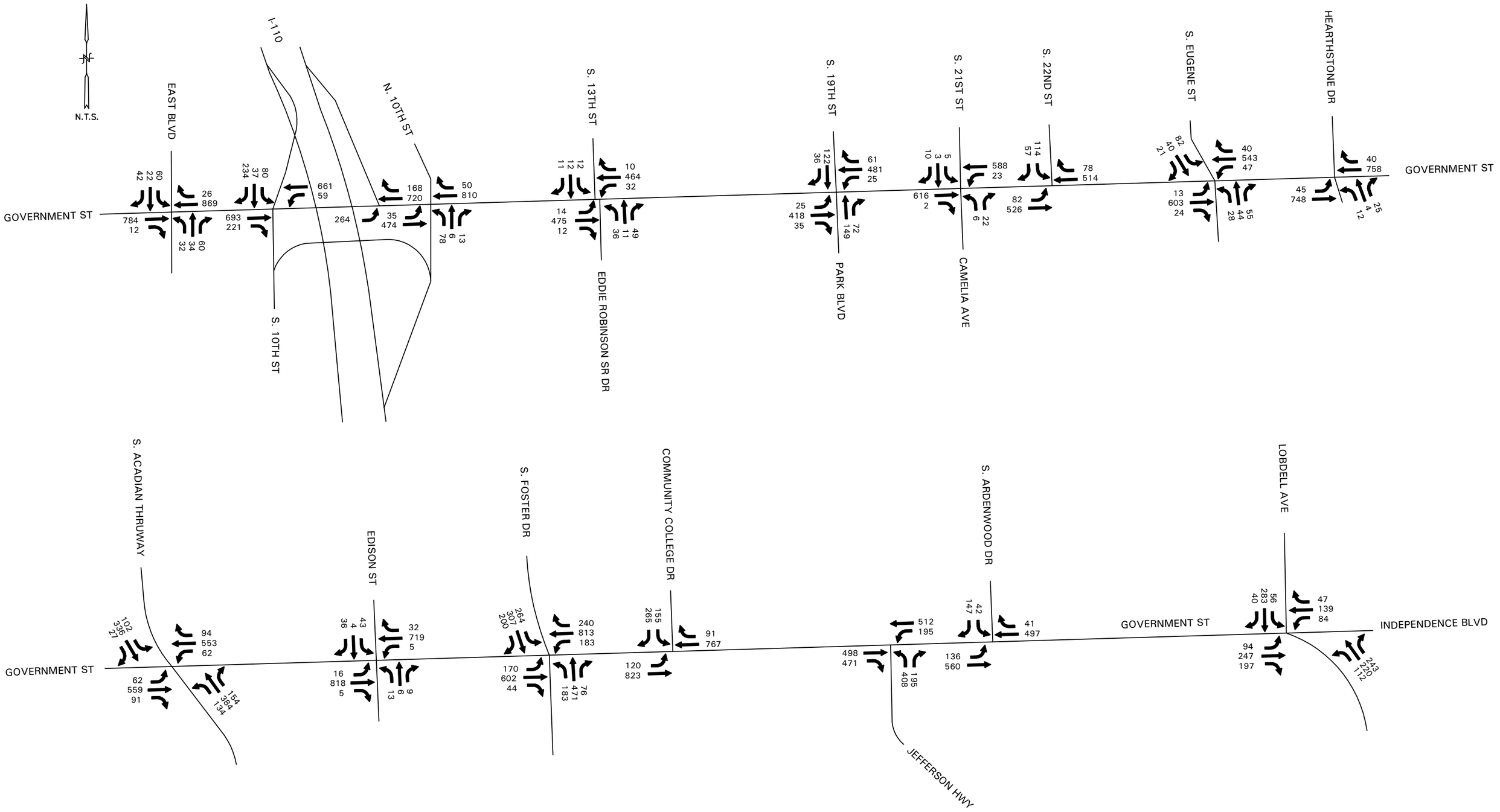


FIGURE 29
Volumes - 2014 NOON Proposed

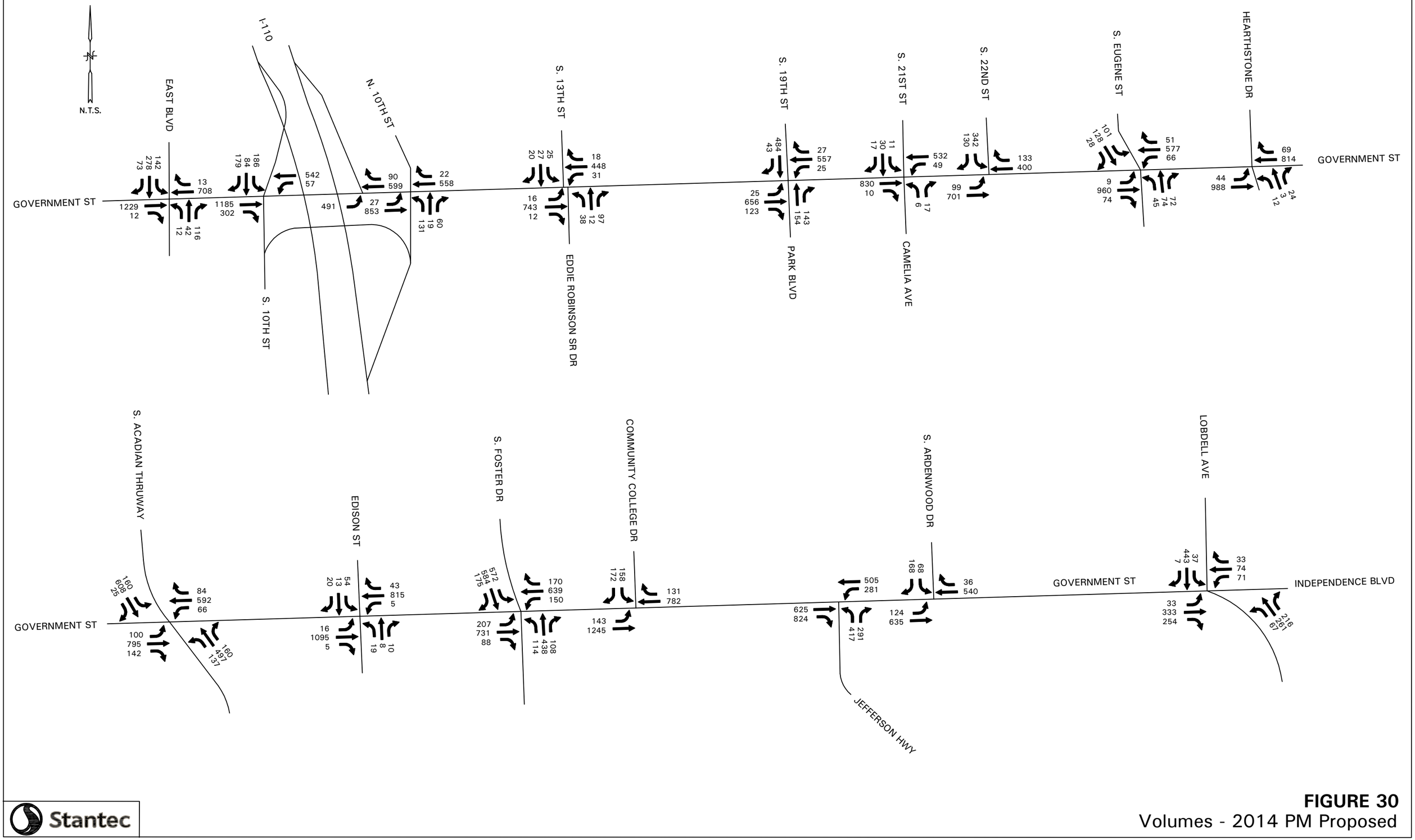


FIGURE 30
Volumes - 2014 PM Proposed

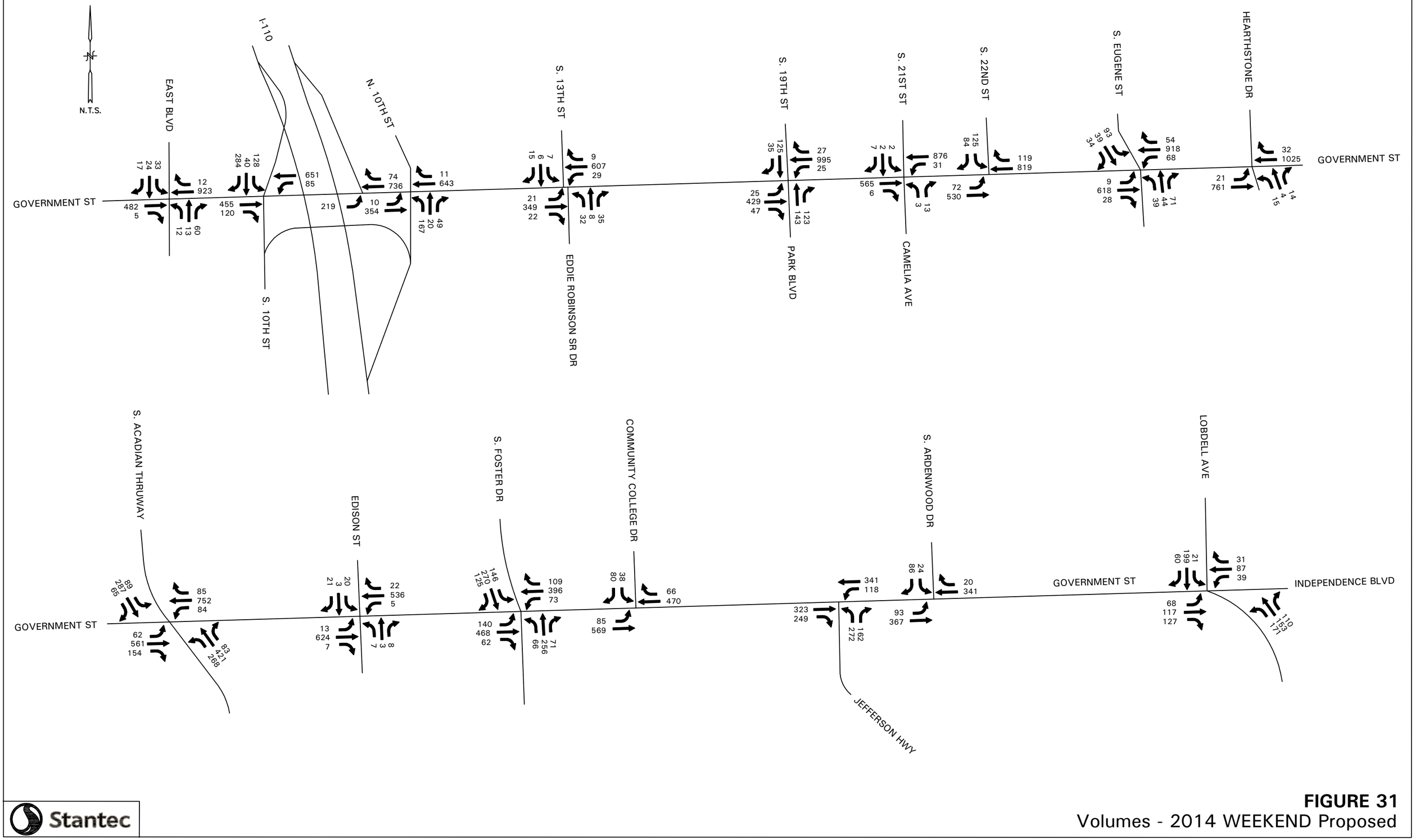


FIGURE 31
Volumes - 2014 WEEKEND Proposed

4.3 OPERATIONAL ANALYSIS

Traffic models were developed using Synchro 8 for the existing and proposed road diet. To determine the impact of each scenario, the intersections were analyzed to reveal any improvement to the Level of Service (LOS) for individual movements or effects on the overall intersection operation. The LOS was determined by calculating the delay at each approach using the model. Based on the seconds of delay, a LOS was determined for each intersection in the AM and PM peak hours. LOS's are rated from A (free flow of traffic) to F (total breakdown of traffic flow). LOS criteria for signalized intersections and roundabouts (based on the Highway Capacity Manual 2000) are presented in **Table 18**.

The proposed roundabout at Government Street and Lobdell Avenue has been analyzed using SIDRA INTERSECTION 6, according to the LADOTD Roundabout EDSM. A separate report will be submitted to satisfy all of the Roundabout EDSM requirements.

Table 18: Level of Service Criteria for Signalized Intersections and Roundabouts

Level of Service	Delay Range (seconds)
A	< 10
B	≥ 10 and < 20
C	≥ 20 and < 35
D	≥ 35 and < 55
E	≥ 55 and < 80
F	≥ 80

The results of the Synchro and SIDRA analyses are presented in **Table 19 and Table 20** on the following pages. The detailed analyses results are included in **Appendix E and Appendix F**.

Table 21 through Table 24 show the 50% and 95% queues. The queues represent the expected distance occupied by stopped vehicles at the intersection and will be used for calculating turn lane storage lengths for the new turn lanes shown in **Figure 10**.

Table 19: Peak Hour Level of Service Results, East Boulevard to S. Eugene Street

	AM					NOON					PM					WEEKEND				
	2014 Existing		2014 Proposed			2014 Existing		2014 Proposed			2014 Existing		2014 Proposed			2014 Existing		2014 Proposed		
East Blvd at Government St	**Delay**	**LOS**	**Delay**	**LOS**	**% Δ**	**Delay**	**LOS**	**Delay**	**LOS**	**% Δ**	**Delay**	**LOS**	**Delay**	**LOS**	**% Δ**	**Delay**	**LOS**	**Delay**	**LOS**	**% Δ**
Northbound (East Blvd)	21.9	C	19.4	B	-11%	23.4	C	21.2	C	-9%	21.7	C	19.8	B	-9%	15.7	B	13.9	B	-11%
Southbound (East Blvd)	31.3	C	28.0	C	-11%	28.3	C	25.5	C	-10%	30.4	C	29.4	C	-3%	27.5	C	24.5	C	-11%
Eastbound (Government St)	4.4	A	5.8	A	32%	6.8	A	8.6	A	26%	18.5	B	17.1	B	-8%	5.2	A	6.7	A	29%
Westbound (Government St)	4.2	A	6.1	A	45%	3.0	A	3.3	A	10%	6.4	A	7.8	A	22%	3.6	A	3.4	A	-6%
Overall	**7.5**	**A**	**8.6**	**A**	**15%**	**7.5**	**A**	**8.0**	**A**	**7%**	**17.7**	**B**	**17.0**	**B**	**-4%**	**5.9**	**A**	**6.0**	**A**	**2%**
I-110 SB Ramp at Government St																				
Southbound (I-110 SB Off-Ramp)	25.5	C	23.8	C	-7%	14.4	B	14.6	B	1%	33.8	C	30.7	C	-9%	14.6	B	14.0	B	-4%
Eastbound (Government St)	35.6	D	36.5	D	3%	17.5	B	15.7	B	-10%	19.3	B	17.1	B	-11%	20.4	C	20.5	C	0%
Westbound (Government St)	19.4	B	22.4	C	15%	5.4	A	2.0	A	-63%	8.1	A	9.0	A	11%	10.2	B	9.3	A	-9%
Overall	**26.3**	**C**	**27.3**	**C**	**4%**	**12.6**	**B**	**10.5**	**B**	**-17%**	**19.2**	**B**	**17.6**	**B**	**-8%**	**14.6**	**B**	**14.2**	**B**	**-3%**
I-110 NB Ramp at Government St																				
Northbound (I-110 NB Off-Ramp)	38.9	D	28.9	C	-26%	40.6	D	36.3	D	-11%	35.7	D	30.3	C	-15%	29.3	C	23.6	C	-19%
Eastbound (Government St)	18.4	B	24.1	C	31%	6.2	A	8.6	A	39%	7.5	A	7.4	A	-1%	6.3	A	9.7	A	54%
Westbound (Government St)	20.1	C	31.7	C	58%	17.1	B	16.0	B	-6%	14.0	B	25.8	C	84%	19.6	B	19.3	B	-2%
Overall	**24.0**	**C**	**28.0**	**C**	**17%**	**13.6**	**B**	**13.8**	**B**	**1%**	**11.8**	**B**	**14.6**	**B**	**24%**	**15.9**	**B**	**16.2**	**B**	**2%**
Eddie Robinson Sr Dr / S. 13th St at Government St																				
Northbound (Eddie Robinson Sr Dr)	35.7	D	37.7	D	6%	45.6	D	45.9	D	1%	40.8	D	43.2	D	6%	36.4	D	36.2	D	-1%
Southbound (S. 13th St)	32.6	C	32.1	C	-2%	39.3	D	39.2	D	0%	54.9	D	53.3	D	-3%	28.1	C	28.0	C	0%
Eastbound (Government St)	0.4	A	1.3	A	225%	0.9	A	1.7	A	89%	1.7	A	6.4	A	276%	0.6	A	1.4	A	133%
Westbound (Government St)	1.2	A	5.5	A	358%	5.8	A	4.0	A	-31%	4.0	A	1.6	A	-60%	2.6	A	3.4	A	31%
Overall	**4.5**	**A**	**7.3**	**A**	**62%**	**8.0**	**A**	**7.6**	**A**	**-5%**	**8.4**	**A**	**10.7**	**B**	**27%**	**4.8**	**A**	**5.5**	**A**	**15%**
Park Blvd / S. 19th St at Government St																				
Northbound (Park Blvd)	47.2	D	46.5	D	-1%	46.6	D	46.8	D	0%	17.2	B	16.3	B	-5%	33.0	C	33.4	C	1%
Southbound (S. 19th Blvd)	38.9	D	38.7	D	-1%	62.0	E	62.3	E	0%	66.7	E	63.1	E	-5%	53.5	D	54.8	D	2%
Eastbound (Government St)	6.9	A	6.3	A	-9%	1.3	A	3.7	A	185%	14.5	B	30.1	C	108%	6.8	A	4.7	A	-31%
Westbound (Government St)	4.3	A	8.3	A	93%	3.0	A	4.5	A	50%	13.6	B	23.0	C	69%	5.5	A	11.4	B	107%
Overall	**16.5**	**B**	**18.0**	**B**	**9%**	**15.8**	**B**	**17.2**	**B**	**9%**	**26.4**	**C**	**34.1**	**C**	**29%**	**13.4**	**B**	**16.2**	**B**	**21%**
Camelia Ave / S. 21st St at Government St																				
Northbound (Camelia Ave)	44.8	D	-	-	-	28.6	C	-	-	-	22.1	C	-	-	-	11.0	B	-	-	-
Southbound (S. 21st St)	32.1	C	-	-	-	35.2	D	-	-	-	45.4	D	-	-	-	29.7	C	-	-	-
Eastbound (Government St)	0.6	A	-	-	-	1.1	A	-	-	-	0.9	A	-	-	-	2.1	A	-	-	-
Westbound (Government St)	2.1	A	-	-	-	1.0	A	-	-	-	2.3	A	-	-	-	3.0	A	-	-	-
Overall	**4.3**	**A**	**-**	**-**	**-**	**2.1**	**A**	**-**	**-**	**-**	**3.3**	**A**	**-**	**-**	**-**	**3.0**	**A**	**-**	**-**	**-**
S. 22nd St at Government St																				
Southbound (S. 22nd St)	35.0	D	42.0	D	20%	41.3	D	48.9	D	18%	50.5	D	49.6	D	-2%	32.4	C	42.2	D	30%
Eastbound (Government St)	2.9	A	6.0	A	107%	2.4	A	2.5	A	4%	4.8	A	7.4	A	54%	7.4	A	6.5	A	-12%
Westbound (Government St)	1.5	A	3.9	A	160%	3.9	A	2.6	A	-33%	7.9	A	9.2	A	16%	3.1	A	4.6	A	48%
Overall	**6.5**	**A**	**9.7**	**A**	**49%**	**7.9**	**A**	**8.3**	**A**	**5%**	**17.0**	**B**	**19.0**	**B**	**12%**	**8.1**	**A**	**9.7**	**A**	**20%**
S. Eugene St at Government St																				
Northbound (S. Eugene St)	45.3	D	46.6	D	3%	31.9	C	33.0	C	3%	40.7	D	42.6	D	5%	24.7	C	24.7	C	0%
Southbound (S. Eugene St)	47.4	D	47.4	D	0%	54.4	D	54.3	D	0%	66.9	E	68.1	E	2%	43.4	D	43.5	D	0%
Eastbound (Government St)	4.0	A	6.2	A	55%	6.0	A	7.4	A	23%	7.9	A	15.9	B	101%	2.9	A	9.6	A	231%
Westbound (Government St)	2.1	A	7.2	A	243%	4.3	A	4.9	A	14%	7.2	A	8.9	A	24%	4.0	A	11.4	B	185%
Overall	**10.0**	**B**	**13.4**	**B**	**34%**	**11.9**	**B**	**12.8**	**B**	**8%**	**17.1**	**B**	**22.1**	**C**	**29%**	**8.4**	**A**	**14.5**	**B**	**73%**

Table 20: Peak Hour Level of Service Results, S. Acadian Thruway to Lobdell Avenue

	AM					NOON					PM					WEEKEND				
	2014 Existing		2014 Proposed			2014 Existing		2014 Proposed			2014 Existing		2014 Proposed			2014 Existing		2014 Proposed		
S. Acadian Thruway at Government St	**Delay**	**LOS**	**Delay**	**LOS**	**% Δ**	**Delay**	**LOS**	**Delay**	**LOS**	**% Δ**	**Delay**	**LOS**	**Delay**	**LOS**	**% Δ**	**Delay**	**LOS**	**Delay**	**LOS**	**% Δ**
Northbound (S. Acadian Thruway)	33.2	C	30.4	C	-8%	26.4	C	38.7	D	47%	32.5	C	45.7	D	41%	26.4	C	31.0	C	17%
Southbound (S. Acadian Thruway)	29.6	C	44.7	D	51%	36.9	D	34.2	C	-7%	38.9	D	53.9	D	39%	41.3	D	31.6	C	-23%
Eastbound (Government St)	13.0	B	23.1	C	78%	21.5	C	15.3	B	-29%	33.9	C	49.7	D	47%	18.6	B	31.2	C	68%
Westbound (Government St)	20.3	C	14.6	B	-28%	12.9	B	11.3	B	-12%	20.0	C	21.8	C	9%	9.7	A	43.3	D	346%
Overall	**24.1**	**C**	**26.7**	**C**	**11%**	**24.1**	**C**	**23.4**	**C**	**-3%**	**31.7**	**C**	**43.6**	**D**	**38%**	**23.0**	**C**	**35.1**	**D**	**53%**
Edison St at Government St																				
Northbound (Edison St)	32.7	C	-	-	-	37.1	D	-	-	-	37.4	D	-	-	-	30.2	C	-	-	-
Southbound (Edison St)	46.7	D	-	-	-	43.3	D	-	-	-	52.5	D	-	-	-	31.5	C	-	-	-
Eastbound (Government St)	1.3	A	-	-	-	1.2	A	-	-	-	4.5	A	-	-	-	3.0	A	-	-	-
Westbound (Government St)	4.7	A	-	-	-	7.2	A	-	-	-	3.0	A	-	-	-	4.1	A	-	-	-
Overall	**5.7**	**A**	**-**	**-**	**-**	**6.5**	**A**	**-**	**-**	**-**	**6.3**	**A**	**-**	**-**	**-**	**4.9**	**A**	**-**	**-**	**-**
S. Foster Dr at Government St																				
Northbound (S. Foster Dr)	59.5	E	65.6	E	10%	97.3	F	81.9	F	-16%	68.8	E	72.5	E	5%	45.1	D	46.0	D	2%
Southbound (S. Foster Dr)	46.3	D	50.0	D	8%	46.9	D	54.0	D	15%	131.5	F	52.2	D	-60%	42.8	D	40.1	D	-6%
Eastbound (Government St)	58.2	E	36.2	D	-38%	71.0	E	44.1	D	-38%	58.6	E	41.5	D	-29%	14.2	B	12.6	B	-11%
Westbound (Government St)	32.3	C	19.5	B	-40%	61.5	E	32.3	C	-47%	36.2	D	36.6	D	1%	25.3	C	19.1	B	-25%
Overall	**47.9**	**D**	**41.6**	**D**	**-13%**	**67.9**	**E**	**49.9**	**D**	**-27%**	**77.4**	**E**	**49.0**	**D**	**-37%**	**29.8**	**C**	**27.2**	**C**	**-9%**
Community College Dr at Government St																				
Southbound (Community College Dr)	42.0	D	45.9	D	9%	57.5	E	79.1	E	38%	55.4	E	86.0	F	55%	27.5	C	27.5	C	0%
Eastbound (Government St)	11.6	B	24.4	C	110%	11.5	B	8.7	A	-24%	62.1	E	7.0	A	-89%	6.3	A	1.6	A	-75%
Westbound (Government St)	4.0	A	60.3	E	1408%	8.8	A	55.4	E	530%	7.3	A	42.9	D	488%	3.9	A	3.8	A	-3%
Overall	**9.9**	**A**	**45.1**	**D**	**356%**	**19.2**	**B**	**40.0**	**D**	**108%**	**42.3**	**D**	**29.4**	**C**	**-30%**	**7.2**	**A**	**4.9**	**A**	**-32%**
Jefferson Hwy at Government St																				
Northbound (Jefferson Hwy)	83.6	F	41.6	D	-50%	25.2	C	43.3	D	72%	124.5	F	55.4	E	-56%	42.1	D	35.5	D	-16%
Eastbound (Government St)	23.7	C	14.9	B	-37%	61.0	E	10.4	B	-83%	49.8	D	20.7	C	-58%	12.7	B	5.5	A	-57%
Westbound (Government St)	24.2	C	29.9	C	24%	20.2	C	17.4	B	-14%	29.4	C	40.6	D	38%	16.8	B	9.3	A	-45%
Overall	**45.7**	**D**	**29.5**	**C**	**-35%**	**32.6**	**C**	**21.3**	**C**	**-35%**	**62.3**	**E**	**34.3**	**C**	**-45%**	**22.7**	**C**	**15.6**	**B**	**-31%**
S. Ardenwood Dr at Government St																				
Southbound (S. Ardenwood Dr)	21.9	C	21.3	C	-3%	21.4	C	21.0	C	-2%	25.1	C	24.8	C	-1%	19.6	B	19.4	B	-1%
Eastbound (Government St)	1.7	A	5.4	A	218%	2.8	A	1.3	A	-54%	3.8	A	1.6	A	-58%	0.9	A	0.7	A	-22%
Westbound (Government St)	4.4	A	8.1	A	84%	4.5	A	7.1	A	58%	5.2	A	8.3	A	60%	3.1	A	4.5	A	45%
Overall	**5.5**	**A**	**8.7**	**A**	**58%**	**5.9**	**A**	**6.1**	**A**	**3%**	**7.5**	**A**	**7.6**	**A**	**1%**	**4.0**	**A**	**4.4**	**A**	**10%**
Lobdell Ave at Government St																				
Northbound (Lobdell Ave)	27.9	C	1.3	A	-95%	27.4	C	1.6	A	-94%	31.7	C	1.7	A	-95%	27.2	C	1.0	A	-96%
Southbound (Lobdell Ave)	33.6	C	1.7	A	-95%	37.7	D	2.2	A	-94%	46.1	D	1.7	A	-96%	26.6	C	1.7	A	-94%
Eastbound (Government St)	30.8	C	1.6	A	-95%	28.4	C	2.0	A	-93%	29.6	C	3.1	A	-90%	22.7	C	0.9	A	-96%
Westbound (Government St)	24.6	C	2.4	A	-90%	23.8	C	2.3	A	-90%	28.5	C	1.7	A	-94%	17.0	B	1.8	A	-89%
Overall	**29.8***	**C**	**1.6****	**A**	**-95%**	**29.4***	**C**	**2.0****	**A**	**-93%**	**34.5***	**C**	**2.2****	**A**	**-94%**	**24.5***	**C**	**1.2****	**A**	**-95%**

*SIDRA Signalized Analysis

**SIDRA Roundabout Analysis

Table 21: Proposed Configuration 50% Queue Results (feet), East Boulevard to S. Eugene Street

	AM		NOON		PM		WEEKEND	
East Blvd at Government St	**Existing**	**Proposed**	**Existing**	**Proposed**	**Existing**	**Proposed**	**Existing**	**Proposed**
Northbound Left (East Blvd)	14	14	20	19	6	6	6	6
Northbound Through (East Blvd)	32	30	21	20	23	22	7	6
Northbound Right (East Blvd)	0	0	0	0	41	35	0	0
Southbound Left (East Blvd)	31	29	38	36	84	83	18	17
Southbound Through (East Blvd)	44	42	14	13	175	173	13	12
Southbound Right (East Blvd)	0	0	0	0	0	0	0	0
Eastbound Through (Government St)	65	77	111	127	353	316	50	59
Westbound Through (Government St)	121	112	36	29	102	102	51	32
I-110 SB Ramp at Government St								
Southbound Through (I-110 SB Off-Ramp)	87	84	67	68	192	188	74	71
Southbound Right (I-110 SB Off-Ramp)	252	246	7	5	0	0	48	52
Eastbound Through (Government St)	266	274	251	256	571	195	142	150
Westbound Left (Government St)	26	26	8	1	17	28	19	14
Westbound Through (Government St)	178	185	43	7	61	66	77	56
I-110 NB Ramp at Government St								
Northbound Left (I-110 NB Off-Ramp)	291	263	56	53	95	90	98	90
Northbound Through (I-110 NB Off-Ramp)	14	13	4	4	12	12	10	9
Eastbound Left (Government St)	97	125	37	78	120	97	27	42
Eastbound Through (Government St)	43	44	36	53	81	66	40	47
Westbound Through (Government St)	217	251	245	243	192	197	193	148
Eddie Robinson Sr Dr / S. 13th St at Government St								
Northbound Through (Eddie Robinson Sr Dr)	29	32	41	42	50	56	26	26
Southbound Through (S. 13th St)	16	16	18	18	42	43	9	9
Eastbound Left (Government St)	-	1	-	0	-	3	-	1
Eastbound Through (Government St)	2	16	1	7	3	182	2	15
Westbound Left (Government St)	-	3	-	5	-	1	-	1
Westbound Through (Government St)	15	242	80	84	3	10	38	63
Park Blvd / S. 19th St at Government St								
Northbound Through (Park Blvd)	174	174	111	112	84	82	90	90
Northbound Right (Park Blvd)	8	8	0	0	5	0	0	0
Southbound Through (S. 19th Blvd)	89	89	110	110	388	379	94	95
Eastbound Left (Government St)	-	1	-	2	-	6	-	2
Eastbound Through (Government St)	34	26	16	92	200	470	78	35
Westbound Left (Government St)	-	3	-	3	-	8	-	1
Westbound Through (Government St)	82	220	40	82	171	226	104	350
S. 22nd St at Government St								
Southbound Left (S. 22nd St)	80	87	66	86	180	250	68	80
Southbound Right (S. 22nd St)	-	0	-	0	-	0	-	0
Eastbound Left (Government St)	-	27	-	4	-	11	-	20
Eastbound Through (Government St)	27	195	3	29	46	80	83	171
Westbound Through (Government St)	18	38	93	41	31	85	47	75
S. Eugene St at Government St								
Northbound Left (S. Eugene St)	25	25	19	19	32	31	23	23
Northbound Through (S. Eugene St)	75	79	34	37	75	78	26	26
Southbound Left (S. Eugene St)	31	31	61	61	77	76	59	59
Southbound Through (S. Eugene St)	44	45	28	29	107	106	23	23
Eastbound Left (Government St)	-	1	-	2	-	2	-	1
Eastbound Through (Government St)	68	59	87	145	148	358	62	185
Westbound Left (Government St)	-	7	-	6	-	18	-	3
Westbound Through (Government St)	46	194	12	121	17	158	64	40

Table 22: Proposed Configuration 50% Queue Results (feet), S. Acadian Thruway to Lobdell Avenue

	AM		NOON		PM		WEEKEND	
S. Acadian Thruway at Government St	**Existing**	**Proposed**	**Existing**	**Proposed**	**Existing**	**Proposed**	**Existing**	**Proposed**
Northbound Left (S. Acadian Thruway)	33	51	68	75	62	74	130	133
Northbound Through (S. Acadian Thruway)	131	163	184	157	232	203	142	144
Northbound Right (S. Acadian Thruway)	0	0	0	0	0	0	0	0
Southbound Left (S. Acadian Thruway)	64	67	51	56	74	87	38	39
Southbound Through (S. Acadian Thruway)	208	187	88	122	186	225	72	91
Southbound Right (S. Acadian Thruway)	0	0	0	0	0	0	0	0
Eastbound Left (Government St)	-	25	-	19	-	32	-	36
Eastbound Through (Government St)	130	262	200	266	425	~776	204	295
Westbound Left (Government St)	-	7	-	11	-	~62	-	38
Westbound Through (Government St)	145	64	75	95	218	55	184	441
S. Foster Dr at Government St								
Northbound Left (S. Foster Dr)	98	99	~180	141	~104	84	42	42
Northbound Through (S. Foster Dr)	196	202	207	217	207	213	98	99
Southbound Left (S. Foster Dr)	68	68	104	105	~273	228	50	50
Southbound Through (S. Foster Dr)	152	154	103	115	217	210	88	87
Southbound Right (S. Foster Dr)	0	0	0	0	0	0	0	0
Eastbound Left (Government St)	~116	97	~120	108	~138	112	23	21
Eastbound Through (Government St)	188	171	258	238	343	300	148	98
Westbound Left (Government St)	45	32	122	76	58	77	34	22
Westbound Through (Government St)	311	252	~481	354	218	293	129	73
Community College Dr at Government St								
Southbound Left (Community College Dr)	58	64	257	~282	212	227	24	24
Eastbound Left (Government St)	-	~105	-	56	-	72	-	6
Eastbound Through (Government St)	151	3	89	1	~642	22	27	20
Westbound Through (Government St)	6	~912	203	~548	73	~530	51	61
Jefferson Hwy at Government St								
Northbound Left (Jefferson Hwy)	~331	412	211	294	~289	~323	106	170
Northbound Right (Jefferson Hwy)	-	0	-	0	-	83	-	0
Eastbound Through (Government St)	176	128	176	112	~346	345	4	99
Eastbound Right (Government St)	-	0	-	1	-	22	-	0
Westbound Left (Government St)	149	101	157	66	194	~175	71	28
Westbound Through (Government St)	90	327	76	186	52	211	20	94
S. Ardenwood Dr at Government St								
Southbound Left (S. Ardenwood Dr)	28	28	32	32	51	51	15	15
Southbound Right (S. Ardenwood Dr)	0	0	0	0	0	0	0	0
Eastbound Left (Government St)	-	22	-	4	-	4	-	0
Eastbound Through (Government St)	16	104	62	16	65	23	0	0
Westbound Through (Government St)	73	193	56	137	65	162	15	34
Lobdell Ave at Government St								
Northbound Left (Lobdell Ave)	-	-	-	-	-	-	-	-
Northbound Through (Lobdell Ave)	-	-	-	-	-	-	-	-
Northbound Right (Lobdell Ave)	-	-	-	-	-	-	-	-
Southbound Left (Lobdell Ave)	-	-	-	-	-	-	-	-
Southbound Through (Lobdell Ave)	-	-	-	-	-	-	-	-
Southbound Right (Lobdell Ave)	-	-	-	-	-	-	-	-
Eastbound Left (Government St)	-	-	-	-	-	-	-	-
Eastbound Through (Government St)	-	-	-	-	-	-	-	-
Eastbound Right (Government St)	-	-	-	-	-	-	-	-
Westbound Left (Government St)	-	-	-	-	-	-	-	-
Westbound Through (Government St)	-	-	-	-	-	-	-	-
Westbound Right (Government St)	-	-	-	-	-	-	-	-

Synchro Notes	
~	Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

Table 23: Proposed Configuration 95% Queue Results (feet), East Boulevard to S. Eugene Street

	AM		NOON		PM		WEEKEND	
East Blvd at Government St	**Existing**	**Proposed**	**Existing**	**Proposed**	**Existing**	**Proposed**	**Existing**	**Proposed**
Northbound Left (East Blvd)	39	37	49	46	21	21	22	21
Northbound Through (East Blvd)	68	65	50	47	50	50	23	22
Northbound Right (East Blvd)	49	46	36	34	89	82	34	32
Southbound Left (East Blvd)	67	64	78	74	145	143	45	42
Southbound Through (East Blvd)	87	83	36	35	265	261	35	33
Southbound Right (East Blvd)	36	35	31	29	34	34	18	17
Eastbound Through (Government St)	84	101	141	163	438	393	69	82
Westbound Through (Government St)	95	156	66	73	143	136	76	62
I-110 SB Ramp at Government St								
Southbound Through (I-110 SB Off-Ramp)	140	134	117	118	#310	285	125	120
Southbound Right (I-110 SB Off-Ramp)	392	382	67	65	57	55	118	120
Eastbound Through (Government St)	346	355	67	331	#702	225	198	208
Westbound Left (Government St)	m38	m44	m14	m6	63	m63	27	m25
Westbound Through (Government St)	208	268	51	22	76	97	73	70
I-110 NB Ramp at Government St								
Northbound Left (I-110 NB Off-Ramp)	#469	392	108	103	164	154	169	153
Northbound Through (I-110 NB Off-Ramp)	48	44	28	27	60	55	48	44
Eastbound Left (Government St)	m164	m180	113	164	m162	m147	67	115
Eastbound Through (Government St)	100	108	45	63	m100	m75	52	61
Westbound Through (Government St)	139	278	318	185	80	244	137	116
Eddie Robinson Sr Dr / S. 13th St at Government St								
Northbound Through (Eddie Robinson Sr Dr)	81	85	94	95	115	120	70	70
Southbound Through (S. 13th St)	50	50	48	48	87	87	35	35
Eastbound Left (Government St)	-	m1	-	m0	-	m1	-	1
Eastbound Through (Government St)	3	15	40	131	96	33	7	8
Westbound Left (Government St)	-	m2	-	m16	-	m1	-	m3
Westbound Through (Government St)	24	31	125	146	m139	m13	43	m147
Park Blvd / S. 19th St at Government St								
Northbound Through (Park Blvd)	247	246	173	173	139	136	145	146
Northbound Right (Park Blvd)	49	49	41	41	49	43	48	49
Southbound Through (S. 19th Blvd)	144	143	174	174	#614	#596	153	155
Eastbound Left (Government St)	-	22	-	13	-	m14	-	17
Eastbound Through (Government St)	130	379	28	124	367	#807	54	156
Westbound Left (Government St)	-	m7	-	m10	-	m30	-	m4
Westbound Through (Government St)	162	381	2	134	135	454	150	#879
S. 22nd St at Government St								
Southbound Left (S. 22nd St)	116	145	100	142	225	#389	103	140
Southbound Right (S. 22nd St)	-	47	-	38	-	47	-	44
Eastbound Left (Government St)	-	15	-	15	-	m24	-	31
Eastbound Through (Government St)	43	68	68	72	77	m470	211	153
Westbound Through (Government St)	35	45	222	59	150	288	93	50
S. Eugene St at Government St								
Northbound Left (S. Eugene St)	55	55	46	46	66	69	51	51
Northbound Through (S. Eugene St)	137	140	83	86	131	140	73	73
Southbound Left (S. Eugene St)	67	66	110	110	132	#154	106	106
Southbound Through (S. Eugene St)	85	86	66	67	164	172	60	60
Eastbound Left (Government St)	-	m6	-	m6	-	m1	-	m5
Eastbound Through (Government St)	86	351	149	197	254	#985	15	367
Westbound Left (Government St)	-	m4	-	m10	-	m32	-	m12
Westbound Through (Government St)	43	m69	177	248	289	m242	m101	m702

Synchro Notes	
#	95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
m	Volume for 95th percentile queue is metered by upstream signal.

Table 24: Proposed Configuration 95% Queue Results (feet), S. Acadian Thruway to Lobdell Avenue

	AM		NOON		PM		WEEKEND	
S. Acadian Thruway at Government St	**Existing**	**Proposed**	**Existing**	**Proposed**	**Existing**	**Proposed**	**Existing**	**Proposed**
Northbound Left (S. Acadian Thruway)	55	101	101	117	98	#157	#223	187
Northbound Through (S. Acadian Thruway)	172	214	232	202	299	#282	#231	188
Northbound Right (S. Acadian Thruway)	0	0	0	0	0	0	0	0
Southbound Left (S. Acadian Thruway)	95	106	79	92	#123	#200	70	66
Southbound Through (S. Acadian Thruway)	254	235	121	159	237	294	114	124
Southbound Right (S. Acadian Thruway)	0	0	0	0	0	0	0	0
Eastbound Left (Government St)	-	m#91	-	m48	-	m63	-	m#72
Eastbound Through (Government St)	202	502	305	500	561	#1032	262	#672
Westbound Left (Government St)	-	m15	-	m25	-	m#96	-	#148
Westbound Through (Government St)	395	#762	144	m461	301	m507	119	#874
S. Foster Dr at Government St								
Northbound Left (S. Foster Dr)	#205	#205	#328	#283	#246	145	83	86
Northbound Through (S. Foster Dr)	#282	#306	#291	#338	#308	#332	138	140
Southbound Left (S. Foster Dr)	#121	#132	#177	#188	#379	#347	#88	80
Southbound Through (S. Foster Dr)	201	209	146	163	277	281	127	121
Southbound Right (S. Foster Dr)	35	37	40	65	21	55	11	11
Eastbound Left (Government St)	#251	m#174	#236	m#164	#301	m126	42	m49
Eastbound Through (Government St)	258	210	287	261	#472	m323	103	m207
Westbound Left (Government St)	67	m31	m#199	m82	m#138	m75	69	56
Westbound Through (Government St)	388	m230	#623	m365	210	m288	193	148
Community College Dr at Government St								
Southbound Left (Community College Dr)	123	130	#418	#498	293	#422	78	78
Eastbound Left (Government St)	-	m#225	-	m#96	-	m82	-	m10
Eastbound Through (Government St)	90	m17	181	m17	m#675	m34	209	24
Westbound Through (Government St)	m320	m#706	m152	#938	m222	m#867	103	124
Jefferson Hwy at Government St								
Northbound Left (Jefferson Hwy)	#456	#650	#319	#443	#411	#534	157	239
Northbound Right (Jefferson Hwy)	-	42	-	51	-	153	-	47
Eastbound Through (Government St)	172	#394	146	m327	m#555	m#673	186	126
Eastbound Right (Government St)	-	0	-	m4	-	m60	-	0
Westbound Left (Government St)	232	#165	222	132	291	#347	98	58
Westbound Through (Government St)	110	478	85	283	70	413	36	161
S. Ardenwood Dr at Government St								
Southbound Left (S. Ardenwood Dr)	63	63	69	69	97	97	41	41
Southbound Right (S. Ardenwood Dr)	51	50	56	55	58	56	41	41
Eastbound Left (Government St)	-	m69	-	m8	-	m6	-	5
Eastbound Through (Government St)	m39	m161	m73	29	m85	m26	32	17
Westbound Through (Government St)	106	334	85	238	102	291	51	124
Lobdell Ave at Government St								
Northbound Left (Lobdell Ave)	82.4*	-	77.7*	-	51.3*	-	94.1*	-
Northbound Through (Lobdell Ave)	201.4*	83.7**	159.7*	70.2**	217.2*	73.2**	82.5*	51.5**
Northbound Right (Lobdell Ave)	72.0*	0.0**	99.3*	0.0**	87.8*	0.0**	37.6*	0.0**
Southbound Left (Lobdell Ave)	244.2*	-	239.1*	-	396.9*	-	116.7*	-
Southbound Through (Lobdell Ave)	246.6*	65.1**	242.8*	63.0**	399.1*	87.9**	117.8*	33.9**
Southbound Right (Lobdell Ave)	7.5*	5.2**	7.4*	5.3**	1.2*	0.8**	11.8*	8.0**
Eastbound Left (Government St)	82.8*	-	138.0*	-	49.9*	-	77.5*	27.9**
Eastbound Through (Government St)	98.7*	37.0**	175.9*	72.4**	275.3*	103.5**	65.1*	27.9**
Eastbound Right (Government St)	23.7*	0.0**	50.2*	0.0**	89.8*	0.0**	26.0*	0.0**
Westbound Left (Government St)	31.8*	-	100.4*	-	100.4*	-	33.1*	-
Westbound Through (Government St)	65.2*	23.9**	102.5*	44.0**	67.2*	25.7**	46.7*	21.1**
Westbound Right (Government St)	46.6*	0.0**	71.7*	0.0**	46.1*	0.0**	31.4*	0.0**

*SIDRA Signalized Analysis
**SIDRA Roundabout Analysis

Synchro Notes	
#	95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
m	Volume for 95th percentile queue is metered by upstream signal.

GOVERNMENT STREET
TRAFFIC AND SAFETY ANALYSES
EAST BLVD. TO LOBDELL AVE.
S.P. NO. H.011295

Traffic Analysis
September 25, 2015

The following is a simplified summary of which movements along Government will get worse and which will get better based on the results of the capacity analysis. Movements are highlighted which had a vehicle delay increase or decrease greater than 10 seconds which represented more than 25% of the existing delay.

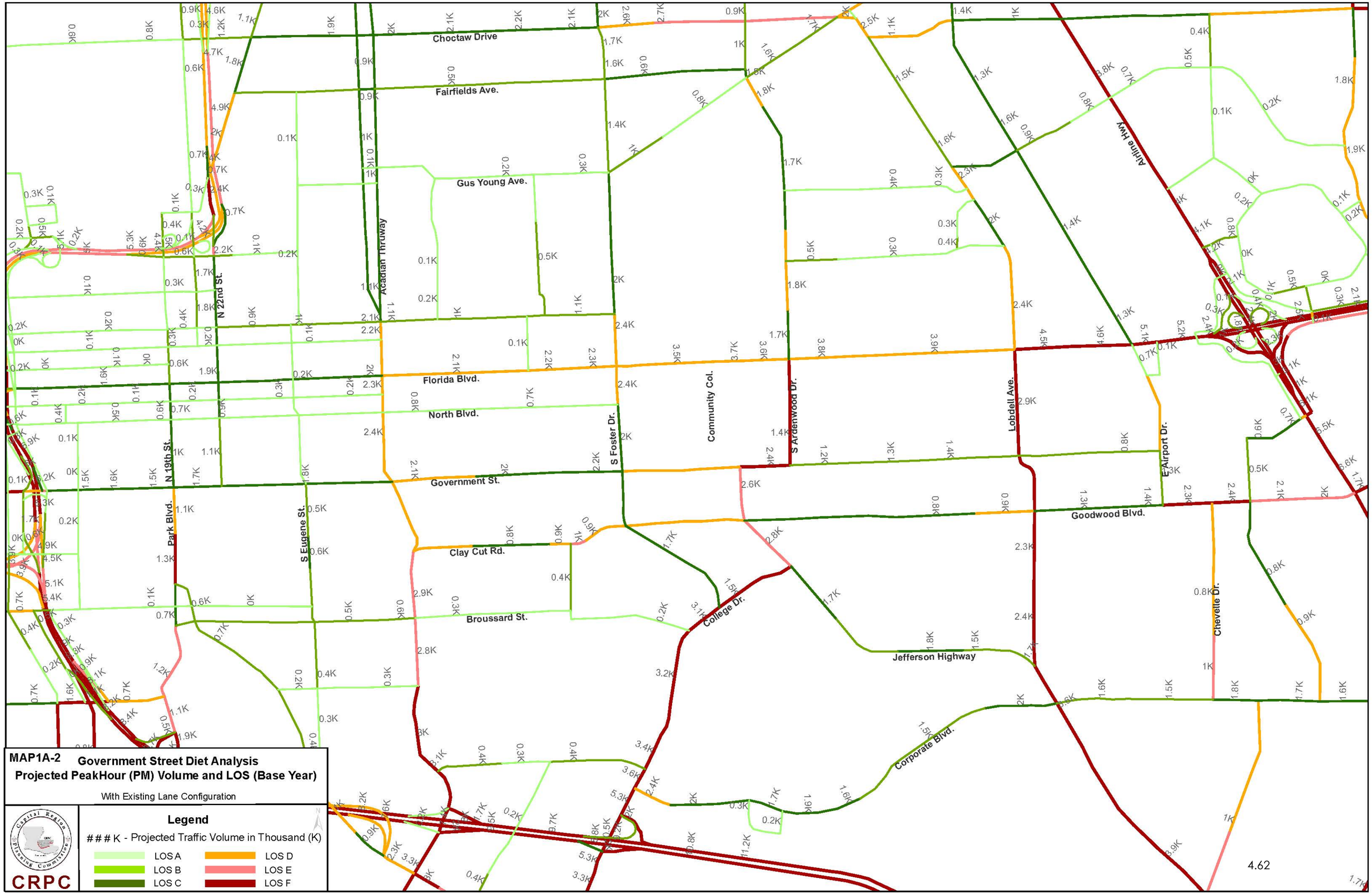
- Government Street at I-110 NB Ramp
  - Vehicle delay increases 10 seconds on Government Street in the westbound direction during both the AM and PM Peak Hours.
- Government Street at Park Boulevard / S. 19th Street
  - Vehicle delay increases 15 seconds on Government Street in the eastbound direction during the PM Peak Hour.
- Government Street at S. Acadian Thruway
  - Vehicle delay increases 10 seconds on Government Street in the eastbound direction during the AM and PM Peak Hours.
- Government Street at S. Foster Drive
  - Vehicle delay is reduced 15 seconds on Government Street in the eastbound direction during both the AM and PM Peak Hours.
  - Vehicle delay is reduced 15 seconds on Government Street in the westbound direction during the AM Peak Hour.
- Government Street at Community College Drive
  - Vehicle delay increases 15 seconds on Government Street in the eastbound direction during the AM Peak Hour. The eastbound through movement operates better than in the existing scenario, but the left turn movement experiences greater delays, which results in a slightly higher delay for the overall eastbound approach. The amount of green time available for the eastbound left turn movement is limited by the westbound through volume. The green time for the westbound through movement increases during the AM peak because of the reduction to one lane, leaving less time and fewer gaps for the left turning vehicles.
  - Vehicle delay is reduced 55 seconds on Government Street in the eastbound direction during the PM Peak Hour.
  - Vehicle delay increases on Government Street in the westbound direction by 55 seconds during the AM Peak Hour and 35 seconds during the PM Peak Hour.
- Government Street at Jefferson Highway
  - Vehicle delay is reduced on Government Street in the eastbound direction by 10 seconds during the AM Peak Hour and by 30 seconds during the PM Peak Hour.
  - Vehicle delay increases 10 seconds on Government Street in the westbound direction during the PM Peak Hour.

- Government Street at Lobdell Avenue
    - Vehicle delay is reduced 25 seconds on Government Street in the eastbound direction during both the AM and PM Peak Hours.
    - Vehicle delay is reduced 20 seconds on Government Street in the westbound direction during both the AM and PM Peak Hours.

4.4 REGIONAL PLANNING MODEL

The Capital Region Planning Commission (CRPC) performed traffic projections using their regional model for conditions representing the existing and proposed geometries. The results of the model are shown in **Figure 32 and Figure 33** on the following pages. The regional model is a macroscopic planning model and therefore does not include all streets that may be used as alternate routes. Capacity analyses show that there is adequate capacity and there should be no additional diversion of traffic besides that mentioned in **Section 4.2**. This corresponds with a small number of vehicles choosing to redistribute during two to four hours per day, five days a week.

The regional model shows some slowing near S. Acadian Thruway, as predicted by the Synchro analysis. This corresponds to the area which expects slight redistributions during the PM peak. The rest of the corridor performs at LOS D or better under the proposed geometry.



MAP1A-2 **Government Street Diet Analysis**
Projected PeakHour (PM) Volume and LOS (Base Year)

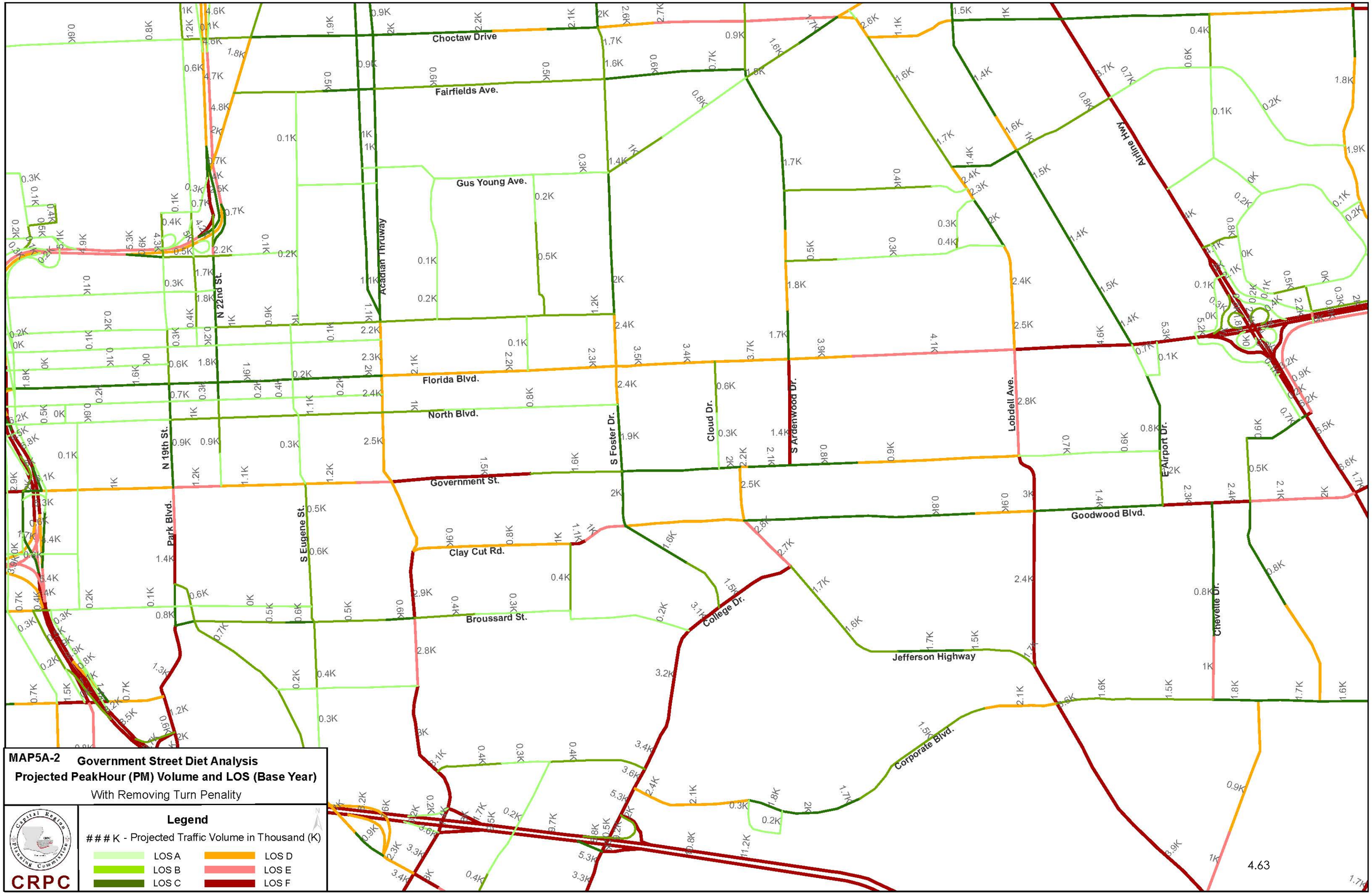
With Existing Lane Configuration

Legend

K - Projected Traffic Volume in Thousand (K)

LOS A	LOS D
LOS B	LOS E
LOS C	LOS F

CRPC


Choctaw Drive
Fairfields Ave.
Gus Young Ave.
Florida Blvd.
North Blvd.
Government St.
Clay Cut Rd.
Broussard St.
Jefferson Highway
Goodwood Blvd.
Corporate Blvd.
College Dr.
Acadian Thruway
N 22nd St.
N 19th St.
Park Blvd.
S Eugene St.
S Foster Dr.
Cloud Dr.
S Ardenwood Dr.
Lobdell Ave.
E Airport Dr.
Chevelle Dr.
Airline Hwy
MAP5A-2 Government Street Diet Analysis
Projected PeakHour (PM) Volume and LOS (Base Year)
With Removing Turn Penality
Legend
K - Projected Traffic Volume in Thousand (K)
LOS A
LOS B
LOS C
LOS D
LOS E
LOS F
CRPC
4.63

5.0 TRAFFIC SIGNAL WARRANTS

Traffic signal warrants were performed for each of the existing signalized intersections along the corridor. The traffic signal warrants assumed the future configuration with the road diet in place. All but three of the intersections satisfied the warrants. The signals at non-warranted intersections have been assumed to be removed in the proposed condition analysis. The warrant results are shown in **Table 25**.

Table 25: Traffic Signal Warrants, by Intersection

	East Blvd	S. 10th St	N. 10th St	Eddie Robinson Sr Dr / S. 13th St	Park Blvd / S. 19th St	Camellia Ave / S. 21st St	S. 22nd St	S. Eugene St	Hearthstone Dr	S. Acadian Thruway	Edison St	S. Foster Dr	Community College Dr (Rebel)	Jefferson Hwy	S. Ardenwood Dr	Lobdell Blvd
Warrant 1: Eight-Hour Vehicular Volume	X	X	X	X	X		X	X		X		X	X	X	X	X
1 A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--		X	X		X					X		X	X	X		X
1 B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	X	X	X	X			X	X		X		X	X	X	X	
1 80% Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)		X	X	X	X		X			X		X	X	X	X	X
Warrant 2: Four-Hour Vehicular Volume	X	X	X	X	X		X	X		X		X	X	X	X	X
2 A. Four-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	X	X	X	X	X		X	X		X		X	X	X	X	X
Warrant 3: Peak Hour	X	X	X	X	X		X	X		X		X	X	X	X	X
3 A. Peak-Hour Conditions (Minor delay --and-- minor volume --and-- total volume) --or--																
3 B. Peak- Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	X	X	X	X	X		X	X		X		X	X	X	X	X

6.0 CONCLUSION

6.1 SAFETY

The predominant crash types that have occurred from January 2008 through December 2010 are rear end (39.41%), right angle (21.18%), side swipe-same direction (15.02%) and left turn-opposite direction (8.99%) crashes. All these crash types are overrepresented when compared to the statewide averages for similar roadways. The geometric features of Government Street contributed to the over-representation of these crash types. Few intersections on Government Street have left turn lanes with protected left turn phasing. The lack of medians and turning lanes contributed to the overrepresentation of side swipe and rear end crashes. These types of crashes can be reduced with the provision of left turn pockets so that turning vehicles have refuge from through vehicles. The proposed road diet offers improved safety for this corridor either by eliminating or reducing conflict points. The Government Street corridor has over 80 intersections and 269 private driveways in 4.2 miles. On the average there are 64 driveways per mile in the corridor. A report published by FHWA showed that for every 10 access points per mile, speeds reduced by 2.5miles every hour. This speed differential due to slow merging vehicles coupled with the increased conflicting movements of the four lane segment contributes to the safety issues observed.

The proposed road diet, which provides a two-way, left-turn lane (TWLTL) or center turn lane, can help improve the safety performance of Government Street. The road diet will reduce the frequency of a broad range of crash types such as rear end, right angle, side swipe, and left turn crashes. The shorter width of the roadway will make it safer for pedestrians to cross. Decreasing the number of lanes pedestrians have to cross reduces their exposure and enhances safety. Also vehicles at an intersection will have fewer conflicting movements and shorter time to traverse the intersection from side streets. Furthermore multiple threat crashes will be reduced. Implementing the road diet will provide space to reassign for other uses including parking, bike lanes and medians. The alternative with a median will provide refuge for pedestrians crossing the street to do so in two stages which will especially benefit the elderly and infirm. The bike lanes will also provide a buffer space for pedestrians and also enhance the safety of bicyclists since other users will recognize their right to use the roadway. On-street parking, if implemented, will also provide a buffer and protection to pedestrians from errant vehicles.

Overall, the anticipated reduction in crashes based on the HSM analysis is in the range of 39.7% - 52.4% should the road diet be implemented. The hour with the highest crashes coincides with the PM peak travel time. A reduction in the crashes during this period will also reduce the congestion and reduce delays in the corridor.

6.2 OPERATIONS

The intersection capacity analyses results in **Table 19** indicate the proposed road diet performs nearly as well as the existing condition. Six approaches along Government street experience increases in vehicle delay of 25% and six approaches experience reductions in vehicle delay of 25%. These results show that traffic operations along Government Street will get slightly better in some areas and slightly worse in others. This road diet performs at LOS D or better at each intersection, satisfying standard roadway design criteria. The regional planning model predicts that 100 vehicles will relocate to North Boulevard during the PM Peak Hour. Based on the operational analysis, the proposed road diet maintains sufficient capacity along Government Street such that no additional diversion of traffic is necessary anticipated.

The implementation of the road diet will also allow left turn lanes to be added on Government Street at Park Boulevard. The addition of left turn movements at these intersections will improve access to these major streets, resulting in a modest redistribution of traffic among the major thoroughfares. This redistribution can be accommodated along the major thoroughfare and should not force any traffic onto the adjacent residential streets.

The three lane cross-section can be maintained along the Government Street corridor with the exception of the intersection at S. Foster Drive. This intersection will need to maintain two eastbound and westbound through lanes to operate with the preferred signal phasing. The two eastbound through lanes will continue from S. Foster Drive until Jefferson Highway.

6.3 RECOMMENDATION

The proposed road diet will enhance the safety of the corridor, increase access and improve the diversity of transportation options, if the removed travel lane is converted to bike lanes and better pedestrian or transit facilities. Furthermore it will enhance the character and appeal of the corridor if green spaces are also provided. This all can be accomplished while not significantly impacting the traffic operations of the corridor. The road diet provides significant improvements over the existing condition.

Appendix A: SAFETY ANALYSIS (JEFFERSON HWY – LOBDELL AVE)

Appendix B: HSM ANALYSIS

The safety analysis is based on the Highway Safety Manual methodology using the worksheets. This offers some insights into the performance of different geometric features on safety. In these analyses, the no-build or existing configuration is analyzed and compared to the various alternatives of road diet proposed for Government Street. Therefore the existing four-lane undivided segment was compared to the three-lane segment with a two-way-left-turn lane with variations such as provision of bike lanes, on-street parking and raised medians.

The worksheets and outputs are presented on the accompanying CD.

Appendix C: TRAFFIC COUNT DATA

Appendix D : TRAFFIC SIGNAL WARRANTS

Appendix E: SYNCHRO ANALYSIS

Appendix F: SIDRA ANALYSIS